



# **Pollution Prevention Planning Guidance Manual**

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**for Chapter 173-307 WAC**

Hazardous Waste and Toxics Reduction Program

Publication #91-2, Revised December 1996

*printed on recycled paper*



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# Forward

**T**he Department of Ecology has administered the pollution prevention planning program provided for in Chapter 70.95C RCW since its passage in 1990. After five years of working with over 600 planning facilities, Ecology contracted a survey of facilities to determine the value of the planning process and to obtain suggestions for improvements.

A majority of facilities responding to the survey expressed general support for pollution prevention planning. These facilities indicated that the requirement to prepare a plan resulted in the implementation of more cost-effective pollution prevention opportunities. They also provided comments about the strengths and weaknesses of the program.

One result of the evaluation was a determination that the Guidance Manual could benefit from a revision. This effort focused primarily toward a clearer expression of the purpose and value of planning, and how each step in the planning process provides value to the facility. This revised Guidance Manual incorporates the suggestions of the planning facilities, along with those from Ecology staff. Additionally, the manual provides guidance for submission of the five-year plan updates, first due in 1997.

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# Introduction

**T**he 1990 Legislature, through their passage of Washington's Hazardous Waste Reduction Act, recognized that disposal of hazardous waste could be both harmful to the environment and costly to those who must send waste for disposal. To address this problem, legislators established a policy to encourage reduction in the use of hazardous substances and hazardous waste generation whenever economically and technically practical. A statewide policy goal of reducing the generation of hazardous waste by fifty percent was set.

Primarily, the law (Chapter 70.95.C RCW) achieves this goal by requiring certain hazardous waste generators and hazardous substance users to prepare plans for voluntarily reducing hazardous substance use and hazardous waste generation. Plans must consider pollution prevention opportunities in the following priority:

- Hazardous substance use and hazardous waste reduction
- Recycling
- Treatment

As mandated by law, the Department of Ecology developed a regulation to implement the requirements, and subsequently adopted Chapter 173-307 WAC, Pollution Prevention Plans. This regulation is found in Appendix VI.

## How will a pollution prevention plan help me?

Several facilities that have participated in the planning process have said this:

*“Pollution Prevention Planning was the perfect tool for understanding the full extent of our waste management needs. It allowed us to get a handle on our systems, rather than just reacting, and it acts as an educational tool for both the waste generator and the environmental manager. Everyone is helped in the long run - it's the ultimate way to manage wastes.”*

*“In the course of writing our Pollution Prevention Plan, we discovered significant benefits, including: 1) cost savings on waste disposal, raw materials, and operations; 2) reduced regulatory burden; 3) coordinated management of various environmental requirements; 4) increased production efficiency; and, 5) improved worker safety.”*



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*“Pollution Prevention Planning gave us a real opportunity to take a multi-media approach to environmental management. It provided a process for pulling together the various environmental requirements that affect our facility, and it helped us to evaluate the environmental trade-offs associated with implementing new technologies or practices. It also assured us that our money would be spent on the right things in the end.”*

## **Who is required to plan?**

Under Chapter 173-307 WAC, facilities that report under Section 313 of the Emergency Planning / Community Right-to-Know Act (EPCRA), or that generate more than 2,640 pounds of hazardous waste per year, must prepare Pollution Prevention Plans. Ecology reviews Dangerous Waste Annual Reports and Annual Toxic Release Inventory (Form R) Reports to identify and notify the facilities required to plan.

## **Is there a planning fee?**

Planning facilities pay an annual fee based upon the amounts reported for hazardous waste generation and toxic chemical releases.

## **Are there exclusions for recycling credits?**

WAC 173-307-015(1) provides that hazardous waste recycled on-site or recycled off-site for beneficial use shall not be counted toward the planning threshold amount. A similar provision in the fee regulation, Chapter 173-305 WAC, excludes recycled waste from the fee calculation. The instructions for completing the Dangerous Waste Annual Report provides information on how to claim recycling credits.

## **When is my plan due?**

The law states that facilities must complete a plan by September 1 of the year following the first year that they generate more than 2,640 pounds of hazardous waste or are required to report under Section 313 of EPCRA. In practice, a time lag of over two years exists from when a prior year's activities are reported by facilities until the plan due date. The lag results from the time it takes Ecology to review the reports, identify new planners, and send a notification letter about the planning requirement.

This notification letter specifically tells a facility when the plan is due, but it will always fall on September 1 of the year following your receipt of the notification. Facilities must file a plan update

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every five years following the original plan due date. This information is illustrated in Table 1 below.

Table 1 -- Plan Due Dates			
Dangerous Waste Report > 2,640 lbs. and/or TRI (Form R) Report Submitted to Ecology	Facility Notified of Their Requirement to Prepare a Pollution Prevention Plan	Plan Due Date -- September 1 of:	Five-Year Plan Update Due Date -- September 1 of:
1990	1991	1992	1997
1991	1992	1993	1998
1992	1993	1994	1999
1993	1994	1995	2000
1994	1995	1996	2001
1995	1996	1997	2002
1996	1997	1998	2003
etc.	etc.	etc.	etc.

## What is required in a plan and executive summary?

This manual contains a set of worksheets designed to help you prepare a Pollution Prevention Plan in accordance with the requirements in Chapter 173-307 WAC. Completion of the set of worksheets according to the instructions, and with careful reference to the WAC, should result in an acceptable plan. **Use of the worksheets is highly recommended**, but not required. Should you choose to use another format, be sure to address all the planning elements included in WAC 173-307-030.

Most facilities that prepare pollution prevention plans elect to submit the full plan to Ecology rather than prepare a separate executive summary. The full plan then becomes available for public inspection. If an executive summary is submitted, it becomes the public document, and the full plan remains at the facility.

If you choose to prepare an executive summary, summary information is permitted in several areas. Worksheet L specifies these instances. For the other planning elements, the same level of information required in the full plan must also appear in an executive summary.

Table 2, on page 6, will help you see all the planning requirements for full plans and executive summaries. The table can also serve as a checklist to help you with your document preparation.

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## Have planning requirements changed?

Several of the planning requirements have changed for plans and/or plan updates prepared after September 2, 1996. See Worksheets E and F for more information about these changes.

- Only the “percentage approach” may now be used for the identification of hazardous substances. Prior to September 2, 1996, two alternative approaches could be taken to fulfill the requirement for identifying hazardous wastes and hazardous substances. These were referred to as the “pounds approach” and the “percentage approach.” Both approaches remain as options for the identification of hazardous wastes.
- The quantities of hazardous substances used and wastes generated that must be identified are 95 percent. Prior to September 2, 1996, facilities needed to identify 90 percent of the hazardous substances used and 90 percent of the hazardous wastes generated.

Additionally, Ecology is now providing for an alternative to the “traditional” approach to preparing a pollution prevention plan, as presented in this manual. Facilities that adopt an “environmental management systems” (EMS) approach may also satisfy the planning requirements. A separate guidance manual, publication # 97-401, *Guidance to the Environmental Management System Alternative to Pollution Prevention Planning* will be available in January, 1997. Refer to this document for details about the environmental management system approach. Contact Ecology’s Publication Distribution Office at (360) 407-7472 to obtain a copy.

## What is required for a five-year update?

Your Pollution Prevention Plan needs to cover a five year period. WAC 173-307-070(2) requires updates to the plan every five years. Except as noted above, a plan update must conform to the same requirements as the original plan. **Ecology views the update process as adequate if the parts of the original plan that have become out of date or invalid are updated. Otherwise, a reference to each valid part in the original plan will suffice.** Providing copies of valid information may be more useful than just references, as a “stand alone” document would then exist for facility use and for public review.

Some parts of the initial plan will most likely need revision, such as the inventories of hazardous substances and wastes to comply with the 95 percent requirement. These particular updates (Worksheets E and F), along with current service or production levels (Worksheet A) will also establish new baselines for your

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updated plan. Table 2 may help you with the link from your initial plan to a five-year update. It may also help identify the sections where changes have likely occurred.

Use the new worksheets provided in this guidance manual for the update. You will need to reorganize and renumber the worksheets from the old manual to correspond with the new worksheets. Table 2 on page 6 provides a cross reference to the old worksheet numbers. Ecology staff are available to help you with the plan update process.

**Table 2 -- Planning Elements**

This table may be used as a checklist to track completed planning elements. The planning elements are identified as being required or not (Yes/No), or with clarifying comments as needed. If you are preparing a Five-Year Update, reminders about possible changes that you should address are listed. Also, if you used the worksheets in the previous version of the guidance manual (Publication #91-2 Revised) in your original plan, a cross reference to those worksheet numbers has been provided in the first column.

<b>Worksheet #</b> <i>(with cross reference to worksheets in previous guidance)</i>	<b>Full Plan</b>	<b>Completed</b>	<b>Executive Summary</b>	<b>Completed</b>	<b>Five-Year Update</b>	<b>Completed</b>
<b>A:</b> Facility description, products/services, prior actions <i>(Worksheets 3, 5)</i>	Yes		Yes		Reference plan, or update if needed. Prior actions optional.	
<b>B:</b> Management policy, risk policy, signature <i>(Worksheet 1)</i>	Yes		Yes		More current policies?	
<b>C:</b> Employee Involvement <i>(Worksheet 2)</i>	Yes		No		Reference, or update if needed	
<b>D:</b> Cost accounting <i>(Worksheet 14)</i>	Yes		Yes		New cost acct. system?	
<b>E:</b> Haz sub identification <i>(Worksheets 6A, 6B)</i>	Yes		Yes, or list of types and amounts		95% now required	
<b>F:</b> Haz waste identification <i>(Worksheets 7A, 7B)</i>	Yes		Yes, or list of types and amounts		95% now required	
<b>G:</b> Process descriptions <i>(Worksheets 8, 9)</i>	Yes		Yes, or brief description		New or changed processes?	
<b>H:</b> P2 opportunities <i>(Worksheets 10, 11)</i>	Yes		Yes, or summaries of opps, reasons for rejections, impediments		New P2 opportunities identified? Feasibility changed?	
<b>I:</b> Non specific opportunities <i>(Worksheets 10, 11)</i>	Yes		Yes, or summaries		New opps? Feasibility changed?	
<b>J:</b> Selected opps, goals, dates <i>(Worksheets 12, 13)</i>	Yes		Yes		New goals, action dates?	
<b>K:</b> Research labs <i>(Worksheet 18)</i>	If applicable		If applicable		Reference, or update if applicable	
<b>L:</b> Exec. Summary Addenda <i>(Worksheet 19)</i>	No		Yes		Reference, or update if applicable	

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## Do I need to submit annual progress reports?

WAC 173-307-080 requires planning facilities to submit annual reports on the progress made toward implementing their plan during the prior calendar year. These reports are due each year on September 1 following the due date of their plan. Publication #93-38, *Guidance for Reporting Progress in Pollution Prevention* provides guidance and worksheets for preparing annual reports. Ecology will distribute copies of this publication each spring to all the planning facilities, or it may be requested directly from Ecology staff.

## Will Ecology review my planning documents?

Ecology will review all plans, executive summaries, and annual progress reports. You will be notified if deficiencies are found as part of this review. Ecology's technical assistance staff is available to help you make corrections. Our goal is to help you develop a plan that through its implementation will result in the reduction of hazardous substance use and hazardous waste generation.

## Can I protect proprietary information?

The public will be allowed to review the plans / executive summaries and annual reports you submit. If a document you submit contains proprietary information, you may request that information be deleted from the record before it is opened to the public. Indicate the material you wish deleted when you submit the document. No information will be made public until Ecology makes a decision on your request.

## How do I get started?

Ecology offers a range of technical assistance services that will help you prepare, and implement, your pollution prevention plan. Staff in our four regional offices can serve you by phone or on-site. On-site visits have been particularly beneficial to many facilities. Staff also sponsor workshops and other events designed to help you with your plan or with the technical information you may need to identify pollution prevention opportunities. Samples of approved plans are available for you to look at for ideas that may work for you. Phone numbers for Ecology's Regional Offices may be found in Appendix VII.

The worksheets in this manual are available on diskette, which may be a convenient way for your facility to complete a plan. Feel free to request one from the appropriate regional office.

## Pollution Prevention Successes

A printing plant switched to non-toxic inks and solvents and made other process changes, cutting its waste and toxic air emissions by 97 percent and saving almost \$95,000 a year.

A door manufacturer switched to powdered glue, mixing it in batches with glue-tainted washwater. The company now saves about \$10,000 a year in wastewater disposal costs.

By scheduling orders to sequence from light to dark colors, a painting operation was able to reduce its number of equipment "change-outs." This reduction, coupled with the use of an on-site distillation unit, resulted in saving over \$32,000 a year in waste disposal costs.

An ink manufacturer replaced a toxic cleaning solvent with a substitute to clean their process equipment. The new solvent and resulting waste is now added back into their feed stock. What was previously treated as a waste has become a new source of income for the company.

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# Organization and Management

## A Framework for Your Plan

**W**riting and implementing a pollution prevention plan is similar to writing any other business plan. There must be a clear understanding of why a "program" (in this case a "pollution prevention program") is being implemented, what will be done, and who will do it.

The first four worksheets provided in this guidance manual are designed to help you to set the tone for future implementation. They will also help you to establish the framework for completing a comprehensive and on-going evaluation of how your organization does business.

There are several required planning elements that can be met by completing the worksheets. **Worksheet A** allows you to describe your facility and the products you make or the services you provide. It also gives you the opportunity to give details about the pollution prevention activities you have previously implemented. **Worksheet B** requires a management policy in support of the plan. A policy that risks will not be shifted to other media is also required, as is a management signature. Employee involvement in the development of your plan is emphasized in **Worksheet C**. **Worksheet D** asks for a description of the procedures you will use to compare the total costs of pollution prevention opportunities with current practices.



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## Guidance for Worksheet A

### Facility Description and Prior Accomplishments

This Worksheet provides a framework for your pollution prevention plan by asking for a general description of your facility and a discussion of your past activities.

#### Description of Products, Services, and Level of Production / Services

The rule requires:

*. . . a description of the facility type, a description of product(s) made and/or services provided, and a statement or listing of the current level(s) of production or service activity in units of measure appropriate to the industry or activity. . . -030(1)(c)*

Describe the products you make or the services you provide, including the production or service level(s) for your facility during your plan's base year (usually the year prior to your plan's due date). Use units of measure common to the type of production or service activities that your type of industry is engaged in, such as the number or pounds or gallons of each product produced, annual gross sales, or production hours. When compared from one year to the next, this number should indicate relative growth or other changes within your facility. If the type or volume of your products or services changes greatly from year-to-year, or if you anticipate major changes, please explain these changes.

#### Prior Accomplishments

The rule requires:

*. . . a description of current reduction, recycling and treatment activities and documentation of hazardous substance use and hazardous waste reduction efforts completed prior to the first plan due date specified in WAC 173-307-050. Clearly differentiate reduction from recycling and other management activities. - 030(1)(f)*

Many facilities have completed a variety of pollution prevention activities that they wish to document in their plan. This documentation is important because it can send a message to those who read your plan to define past accomplishments -- progress previously made toward pollution prevention. It can also help track past efforts, and define what has worked and has not worked, so future efforts do not replicate past trials. Note the year that activities were implemented, and, if possible, describe associated benefits such as pounds of waste reduced, dollars saved, or risks that were reduced.

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## Worksheet A

### Facility Description and Prior Accomplishments -030(1)(c) and (f)

Facility Name : \_\_\_\_\_

Industry Type: \_\_\_\_\_

Primary SIC Code: \_\_\_\_\_

Your facility's EPA Identification number (WAD or CRK): \_\_\_\_\_

Description of Products, Services, and Level of Production

Prior Accomplishments

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## Guidance for Worksheet B

### Policy and Signature

**Management commitment to pollution prevention is the key to good results.**

"We are a community minded business that wants to make sure that our waste is properly managed and that every economically feasible pollution prevention measure is implemented. We will look at pollution prevention opportunities that will not shift the risk to one environmental medium or product to another. We will look for alternative products or processes that use less or eliminate the use of toxic materials and/or generate hazardous wastes. We want to make sure the environment is managed properly to insure a healthy place for the children of today and future generations."

"Protecting the environment is a high priority at our company. We are committed to developing and implementing an effective Pollution Prevention Plan, and to achieving our goals. We are committed to minimizing our business impact to the air, water, land and human health. We will ensure that risks will not be shifted from one process, environmental medium or product to another."

Worksheet B will help you establish a pollution prevention policy that expresses management support for your pollution prevention plan and its implementation. Pollution prevention programs are normally successful only when management support is articulated and actively provided.

### Management Policy

The rule requires:

*... a written policy articulating management and corporate support for the plan and a commitment to implement planned activities and achieve established goals. -030(1)(a)*

*... a written policy stating that in implementing the selected options whenever technically and economically practicable, risks will not be shifted from one part of a process, environmental medium, or product to another. -030(2)(f)*

Management policies set the tone of a company's activities and practices. Through them, employees understand the nature and approach of business plans -- they can see how a company hopes to do business. One way to stress the importance of pollution prevention in your business is to define a clear policy statement that shows strong management commitment. A short, simple statement that comes right to the point will be most effective.

The intent of the risk shifting policy is to ensure that a multi-media approach is taken to problem solving so risks are not moved from land to water, water to air, etc. It ensures that your business will take a look at the bigger picture to ensure that if a shift does occur, there is a benefit to human health or the environment.

### Management Signature

The rule requires:

*... the owner, chief executive officer, or other person with the authority to commit management to the plan must sign the plan or the executive summary. -040*

This signature can provide the authority necessary to bring the pollution prevention program to life. The worksheet includes an example of a signature block that meets the intent of the law.

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## Worksheet B

### Policy and Signature - 030(1)(a)(b), (2)(f), and -040\*

Facility Name: \_\_\_\_\_

#### Management Policy & Signature -- 030(1)(a), 030(2)(f), 040

Write a management policy expressing support for planning and a commitment to implementation. The policy should also state that when implementing selected opportunities, risks will not be shifted from one part of a process, environmental medium or product to another, unless a reduction in risk occurs. The owner, chief executive officer, or other person with the authority to commit your organization to the plan must sign the plan or executive summary.

\_\_\_\_\_ (Facility Name) is committed to the  
purpose of this plan and hereby submits it to the Department of Ecology. This Pollution  
Prevention Plan has been prepared in compliance with chapter 173-307 WAC.

\_\_\_\_\_  
*Typed or Printed Name*

\_\_\_\_\_  
*Signature*

\_\_\_\_\_  
*Date*

\_\_\_\_\_  
*Title*

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## Guidance for Worksheet C

### Employee Involvement, Training and Awareness

#### Key ways to involve employees in pollution prevention planning and implementation:

- Make pollution prevention a part of new employee orientation.
- Encourage two-way communication between employees and management.
- Solicit employee ideas about pollution prevention opportunities and other environmental and health/safety issues.
- Reward personnel for their good ideas, active participation, and for achieving goals.
- Post information about pollution prevention goals, achievements and the need for employee participation to "make it work".

Worksheet C is used to describe how employees are involved in the planning process, and how they will be trained about new pollution prevention opportunities.

The rule requires:

*The plan shall include a description of personnel training and employee involvement programs. Each facility required to write a plan is encouraged to advise its employees of the planning process and solicit comments or suggestions from its employees on hazardous substance use and waste reduction opportunities. -030(4)*

Employee involvement is critical in the planning process. Employees from different areas of your facility can provide expert information about processes, practices and systems. They can also help to identify possible improvements. When consulted early and used as resources, these employees can provide the kick-start and momentum necessary to implement a strong pollution prevention program.

You may want to form a Pollution Prevention Team, or create one out of an existing group. Some facilities have simply expanded the focus of their total quality team to include pollution prevention; others have incorporated pollution prevention into the scope of work for their health and safety team. When you build your team, try to involve employees from engineering, accounting, purchasing, materials and inventory control, production, management, marketing, research and development, and health and safety programs.

After completing the pollution prevention plan, the team can help facilitate training and awareness in other employees. Team members can serve as contact points for soliciting pollution prevention ideas from other employees. They also can help bring issues forward for discussion.

In tandem with a Pollution Prevention Team, and to further involve employees in their pollution prevention program, some facilities have posted their management policy (drafted in Worksheet B). They distribute this policy statement to vendors and customers. Some companies have incorporated pollution prevention into existing training programs and monthly meetings. Others distribute reminders about pollution prevention, health and safety, and/or compliance in pay-check packages.

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## Worksheet C

### Employee Involvement, Training and Awareness -030(4)

**Facility Name:** \_\_\_\_\_

Describe how employees will be involved with developing and implementing this plan. If you form a Pollution Prevention Team, list the team member's names and/or job titles and their responsibilities. If you, alone, will be writing the plan, list the names of people that you will consult to complete process evaluations.

Describe how employees will be kept involved with the pollution prevention program, and how they will be trained and made aware of pollution prevention issues. How will their ideas be solicited over time (even after the plan is complete)? How will employees be made aware of new approaches or opportunities, including the policy that was drafted in Worksheet B?

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## Guidance for Worksheet D

### Cost Accounting

#### Examples of how some facilities planned to account for costs:

"Our accounting system was expanded to include codes for hazardous product purchases, hazardous materials management and labor, waste disposal and permit fees, and compliance expenses. All of our departments and production lines are required to use these codes, and are held responsible for these costs. Each department is also held responsible for justifying its use of hazardous products, and must consider the costs associated with potential exposures, leaks, spills, or other liabilities."

"In our books, we separately track the costs for solvents and paints, safety equipment and training, and waste disposal and labor (paper work, drum labeling, etc.). We also separately track our insurance costs, which we hope to continue to decrease by generating less waste."

Appendices II and III are designed to help with the economic analysis of pollution prevention opportunities, but will also provide information on costs that are commonly overlooked.

A price tag for hazardous substance use and hazardous waste management constitutes one of the most convincing arguments for pollution prevention.

The rule requires:

*... a description of accounting systems which will be used to identify hazardous substance use and hazardous waste management costs. Liability, compliance and oversight costs must be components of these accounting systems.*  
-030(3)

This provision encourages the development of accounting systems to track all costs of hazardous substance use and hazardous waste management - usual or direct costs, hidden costs, contingent costs, and less tangible costs. A good cost accounting system properly allocates all costs of hazardous substance use and hazardous waste management and leads to enlightened decision making.

One use of the information in a cost accounting system is to conduct economic analyses of potential pollution prevention measures. The analyses are part of the evaluation process when comparing potential measures to current practice. (See Worksheet H). Therefore, a good cost accounting system is important to this subsequent step in the overall planning process.

No single system to identify the costs of hazardous substance use and hazardous waste management can meet the needs and fit into the existing accounting systems of the diverse facilities preparing and revising pollution prevention plans. Compliance with the accounting requirements may be as simple as adding a line-item to the existing accounting system. On the other hand, it may involve developing a new way of accounting that allows costs of hazardous substance use and hazardous waste management to be charged back to certain products, processes, and cost centers.

Though not required, a provision in the accounting system to track savings resulting from implementation of pollution prevention opportunities can provide valuable information on actual, as opposed to estimated, benefits of pollution prevention measures.

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## Worksheet D

### Cost Accounting

Facility Name: \_\_\_\_\_

#### Cost Accounting

Describe the procedures that are in use or will be used to track and compare the total costs of current practices with pollution prevention alternatives. Remember to include compliance and oversight costs.



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# Systems and Opportunities

## Key Elements of Your Plan

**T**his next part of your plan will help you conduct a systematic evaluation of your processes, practices, and underlying programs to determine pollution prevention opportunities. It will also help you set five-year goals and establish an implementation schedule.

The first step in an evaluation is identifying inputs and outputs. On the next page, the process flow diagram illustrates how to track what goes in and out of your process. Inputs may include: raw feedstocks, utilities like water or electricity, or the use of hazardous substances. Outputs may include: your end product or service, as well as generated solid wastes (cardboard, plastics, etc.), air emissions, water effluents, or hazardous wastes. Clearly understanding how inputs and outputs are related to a particular process will help you in determining reduction opportunities.

As required under the planning law, **Worksheets E, F, and G** focus on identifying hazardous substances and wastes, and determining which processes or practices use or generate those materials. *NOTE: While it is not required, you should feel free to include non-hazardous materials and other key processes/practices in your evaluation, if it is appropriate for meeting your environmental agenda. Many facilities have chosen to expand the scope of their plans to include issues like water conservation, stormwater runoff, and solid waste generation.*

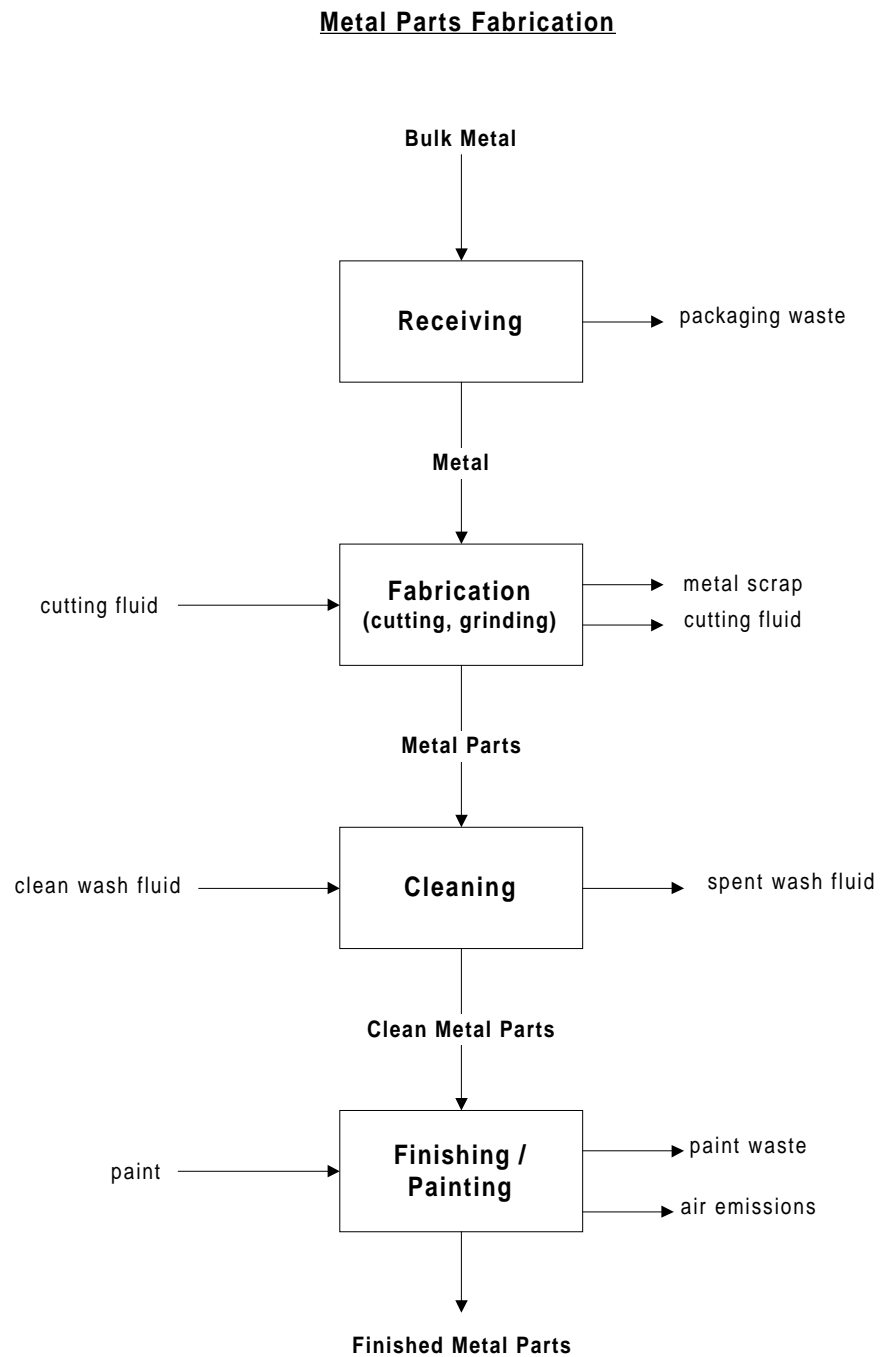
In **Worksheet H** and **I**, you will identify and evaluate pollution prevention opportunities for each of the processes described in **Worksheet G**. In this step, you should evaluate how hazardous substances are used and hazardous wastes are generated (and, if you choose, how non-hazardous products/wastes are used or generated). At the same time, you should also evaluate your overall business practices. Many companies have found that they can lessen their environmental impact by making chemical substitutions, upgrading equipment, or by improving a variety of business systems. Examples include inventory control, purchasing, quality control, research and development, customer services, waste management, employee awareness and training, and maintenance and inspection.

**The key to this systems evaluation is to look at the big picture to identify how your organization could possibly change the way it does business to reduce impacts to human health and/or the environment.**

After identifying pollution prevention opportunities, use **Worksheet J** to list selected opportunities, along with the five-year goals that you hope to achieve, and an implementation schedule that can be attached to each opportunity. As iterated by a group of Fortune 500 businesses, the critical element in any business plan is that clear goals are set, individuals are held accountable, and progress toward goals is tracked.

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**Figure A**  
**Sample Process Flow Diagram**



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## Guidance for Worksheet E

### Identification of Hazardous Substances

Identifying process inputs (raw materials) is a preliminary step to identifying opportunities for reduction, and is therefore important to the overall planning process. The planning law specifically requires that you identify the types and amounts of hazardous substances, or products containing hazardous substances, that you **use**. Your plan can also address non-hazardous inputs, but in this worksheet you will focus on hazardous materials.

To complete **Worksheet E**, you may want to start by doing a complete inventory of the hazardous substances, or products containing hazardous substances, you purchased and/or used in the base year established for your plan. This inventory could include chemical or product name, total pounds, and percentage of identified hazardous constituents. Outlining this information will likely make it much easier for you to complete Worksheet E where you must identify 95 percent of your hazardous substances.

To help you catalog the hazardous substances used in your facility, you may want to review purchasing records, Material Safety Data Sheets, and reports you submit to local fire departments or environmental agencies containing information on hazardous materials or wastes generated, used, stored or released.

***Please note:*** This worksheet should address hazardous substances used, whether they are purchased in pure form or as products that contain hazardous substances, or are manufactured on-site for subsequent use within your facility.

*If you use a pure substance, use the chemical name as listed in SARA III, 313 or the Montreal Protocol.*

*If you use a formulated product consisting of a mixture that contains hazardous substances, you will be describing the hazardous **product** in addition to its hazardous components, and the volume of the product that you use. A hazardous product is anything containing a hazardous substance pursuant to section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) and any further updates, and all ozone-depleting compounds as defined by the Montreal Protocol of October 1987 and any further updates. (Refer to Appendix V)*

*In naming products which are mixtures, use the brand name as listed on the official Material Safety Data Sheet or, if no Material Safety Data Sheet is applicable, your vendor's list.*

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## Worksheet E

### Identification of Hazardous Substances -030(2)(a)(iv)(B)

**Facility Name:** \_\_\_\_\_

The Percentage Approach must be used for plans written or updated after September 2, 1996. It involves screening for 95 percent of the hazardous substances, or products containing hazardous substances, that were used. For the most recent calendar year, identify the following information:

**1. TOTALS**

Total amount of hazardous substances or products containing hazardous substances that were used (pounds): \_\_\_\_\_ = 100 percent.

Calculate 95 percent of the above total (pounds): \_\_\_\_\_ = 95 percent.

2. List HAZARDOUS SUBSTANCES and PRODUCTS containing hazardous substances that were used. Include enough to cover 95 percent of all hazardous substances or products used that contain hazardous substances. Start with those that contain the highest concentrations of hazardous substances and the most toxic hazardous substances. In the third column, list the major hazardous constituents and their concentration, using MSDS or similar sources of information. Ecology staff can help you make these determinations.

SUBSTANCES / PRODUCTS	AMOUNT USED (lbs)	HAZARDOUS CONSTITUENTS AND THEIR CONCENTRATION (HS%)	PROCESS(ES) WHERE USED
SUBTOTAL			

3. List the sources of information that were used to determine that the above quantities were sufficient to reach the threshold requirements -- 030(2)(a)(iii). This may include Material Safety Data Sheets (MSDS), vendor information, annual inventory reports, etc.

---

## Guidance for Worksheets F1 and F2

### Identification of Hazardous Wastes

The identification of outputs, particularly hazardous wastes, and the processes which generate them, is a preliminary step to identifying opportunities for reduction. The law requires that you identify hazardous wastes that are generated, but your plan may include other wastes such as air emissions, water effluent, or solid wastes. (Use Worksheets F1 and F2 only for hazardous wastes.) In identifying hazardous wastes, facilities must choose one of two approaches: the *Pounds Approach (Worksheet F1)* or the *Percent Approach (Worksheet F2)*. It might help to try both approaches before deciding which one you wish to use.

Worksheets F1 and F2 provide for the identification of at least 95 percent of all the hazardous wastes listed on your base year Dangerous Waste Annual Report. Radioactive wastes, mixed radioactive/hazardous wastes, and wastes generated as a result of a remedial action (cleanup) under the federal CERCLA, RCRA Corrective Action, or state Model Toxics Control Act may be excluded prior to the determination of the 95 percent level. You may also exclude any one-time wastes generated during your base year from activities not likely to be repeated in the foreseeable future.

While you would normally use the report for the base year established for your plan, there may be other considerations. If your generation of a waste varies or is expected to vary greatly from year to year, you may elect to use a long-term average annual generation quantity for that waste rather than the previous year's quantity. For example, if you clean a process tank every three years and dispose of the contents, you may want to list one-third the quantity generated by this cleanout as an average annual quantity (rather than either zero or the full amount, depending on whether or not you happened to clean the tank during your base year). Make sure you explain your listing of any quantity that is different from that reported on your Dangerous Waste Annual Report.

***Please note:*** In naming hazardous wastes, use the waste descriptions found on your Dangerous Waste Annual Report, Generation and Management Form. Use the report for the base year established for your plan.

## Worksheet F1

### Waste Identification - Pounds Approach -030-(2)(a)(iv)(A)

Facility Name: \_\_\_\_\_

The Pounds Approach begins by screening for wastes generated in excess of 500 pounds. For the most recent calendar year, identify the following information:

*Note: You can obtain data from your last Dangerous Waste Annual Report.*

#### 1. TOTALS

- Total hazardous waste generated (pounds): \_\_\_\_\_ = 100 percent.
- Calculate 95 percent of the above total (pounds): \_\_\_\_\_ = 95 percent.  
*NOTE: The 100 percent figure used above should equal the sum total of the extremely hazardous waste plus dangerous waste shown on your last Dangerous Waste Annual Report, not including remedial and/or one time waste.*
- Reporting (base) year used: 19\_\_\_\_.

#### 2. List all of your extremely hazardous waste:

WASTE NAME	AMOUNT (lbs.)	PERCENT OF TOTAL	GENERATING PROCESS(ES)
SUBTOTALS			

#### 3. List each dangerous waste generated in quantities greater than 500 pounds:

WASTE NAME	AMOUNT (lbs.)	PERCENT OF TOTAL	GENERATING PROCESS(ES)
SUBTOTALS			

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## Worksheet F1 (continued)

### Waste Identification - Pounds Approach -030-(2)(a)(iv)(A)

Facility Name: \_\_\_\_\_

4. List each dangerous waste generated in quantities less than 500 lbs, which accounts for ten percent or more of your hazardous waste total:

WASTE NAME	AMOUNT (lbs.)	PERCENT OF TOTAL	GENERATING PROCESS(ES)
SUBTOTALS			

5. If the sum of the above SUBTOTALS amount to less than 95 percent of the TOTAL waste generated (see STEP 1), include additional hazardous wastes until you reach the 95 percent quantity.

WASTE NAME	AMOUNT (lbs.)	PERCENT OF TOTAL	GENERATING PROCESS(ES)
SUBTOTALS			

## Worksheet F2

### Waste Identification - Percent Approach -030-(2)(a)(iv)(B)

Facility Name: \_\_\_\_\_

The Percentage Approach involves screening 95 percent of the wastes generated. For the most recent calendar year, identify the following information:

*Note: You can obtain data from your last Dangerous Waste Annual Report.*

1. TOTALS

- Total hazardous waste generated (pounds): \_\_\_\_\_ = 100 percent.
- Calculate 95 percent of the above total (pounds): \_\_\_\_\_ = 95 percent.  
*NOTE: The 100 percent figure used above should equal the sum total of the extremely hazardous waste plus dangerous waste shown on your last Dangerous Waste Annual Report, not including remedial and/or one time waste.*
- Reporting (base) year used: 19\_\_\_\_.

2. List all of your extremely hazardous waste.

WASTE NAME	AMOUNT (lbs.)	PERCENT OF TOTAL	GENERATING PROCESS(ES)
SUBTOTALS			

3. List your dangerous waste. Include enough to cover 95 percent of all hazardous wastes as identified in No.1 above.

WASTE NAME	AMOUNT (lbs.)	PERCENT OF TOTAL	GENERATING PROCESS(ES)
SUBTOTALS			



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## Guidance for Worksheet G

### Process Description

Worksheet G provides for a description of the processes used in your facility. Your description should give an overview of your facility's production, support or maintenance processes, with more detail on those that use the hazardous substances and/or generate the hazardous wastes listed in worksheets E and F1 or F2. You may use a narrative description, process flow diagrams, or both. Diagrams of your processes can make it easier to understand complex facilities or processes. Figure A on page 19 shows an example process flow diagram that describes inputs and outputs.

### Description of Process(es)

The rule requires:

*. . . a general overview of the processes used in production or service activities (a schematic drawing may be included). -030(1)(d); and, . . . a detailed description of each process in the facility that generates hazardous waste or uses products containing hazardous substances as identified in the chosen approach in (a) of this subsection. This description may include a schematic drawing. -030(2)(b)*

The description of each process should include a **Process Name** that can be used in Worksheets E, F1 or F2, H and J.

The level of detail in your description or diagram should be sufficient to help you and others identify and understand how and why the substances or wastes are used or generated. This description will help later in identifying pollution prevention opportunities such as product redesign, improved operator practices, process modifications, and raw material substitution (see Worksheet H). Also, it may be beneficial to identify the fate of each hazardous substance used in the process (e.g. incorporated into the product or vented to the atmosphere) and the disposition of each waste from the process (e.g. recycled on-site or shipped off-site for recycling, incineration, etc.). These typically represent resources lost to your operation. They may be costly sources of waste and inefficiency easily reduced through pollution prevention methods.

If production, hazardous substance use, or hazardous waste generation in a process is intermittent or varies greatly from one year to the next, include a discussion of these variables. For example, if you empty and clean process tanks every few years, tank contents and cleaning wastes may cause hazardous substance and hazardous waste quantities to be higher in those years.

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## Worksheet G

### Process Description -030(1)d) and -030(2)(b)

Give an overview of your facility's processes here. For those processes that use hazardous substances or generate hazardous wastes, provide greater detail. Include a **Process Name** and discuss how these substances or wastes are used or generated. Use a process flow diagram or diagrams, narrative description(s), or both. Describe any major process variations from year-to-year affecting production, hazardous substance use, or hazardous waste generation, if applicable.

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## Guidance for Worksheet H

### Pollution Prevention Opportunities

**Worksheet H** will help you identify pollution prevention opportunities for each process you identified in Worksheet G that uses hazardous substances or generates hazardous wastes. It will evaluate them technically and economically according to the waste management priorities, identify any possible shifting of risks, and select those that will achieve the greatest environmental and business benefits. Use a separate copy of the worksheet for each opportunity.

The rule requires:

*... for the hazardous wastes and products containing hazardous substances identified in (a) within each of the processes identified in (b), an identification, based on thorough research, of all reasonable opportunities for further hazardous substance use reduction, hazardous waste reduction, recycling and treatment.*

*Thorough research shall include at a minimum, a review of available literature commonly available to that industry or trade. The full range of potentially feasible opportunities is to be identified without regard to possible impediments to implementing the opportunities.*

*In identifying opportunities, consideration shall be given to alternative approaches which, in the judgment of the facility management, satisfy the demand for the end products or services but use substantially less hazardous substances or result in the generation of substantially less hazardous waste. -030(2)(c)*

*... an evaluation of the identified opportunities. Opportunities shall be grouped by priority and evaluated according to these priorities. The priorities are, in descending order: hazardous substance use and hazardous waste reduction; recycling; and, treatment...*

*... The evaluation of hazardous substance waste reduction opportunities must include an evaluation of hazardous substance use reduction opportunities for those hazardous substances which result in hazardous waste streams as well as an evaluation of other opportunities for the reduction of hazardous waste.*

*... The evaluation required under this subsection shall include an economic analysis, a technical evaluation, an identification of whether, and if so how, the identified opportunity would result in a shifting of risk(s) from one part of a process, environmental medium or product to*

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*another and an identification of all impediments to implementing the opportunities. The economic analysis shall seek to identify the total costs associated with the current hazardous substance use and hazardous waste generation, management and disposal, compared with comparable costs associated with implementing the alternatives.*

*Evaluation of each opportunity may be considered complete when enough information is available to select or reject the opportunity for implementation. For opportunities rejected, the reason(s) for rejecting them shall be stated. -030(2)(d)*

For each process, first list and evaluate those opportunities that would achieve hazardous substance use reduction, then hazardous waste reduction, followed by converting hazardous waste to product, then recycling, and finally treatment. The flow diagram on page 31 can guide you through the decision making process. Note that you may stop evaluating an opportunity when you decide to accept it for implementation or reject it from further consideration. Sometimes, deciding to use one pollution prevention method eliminates the need to consider others. For example, if you eliminate a parts cleaning step that uses a hazardous solvent, you do not need to identify and evaluate opportunities to recycle the original toxic solvent.

In evaluating each opportunity, answer each of these questions up to the point that you are ready to select or reject the opportunity:

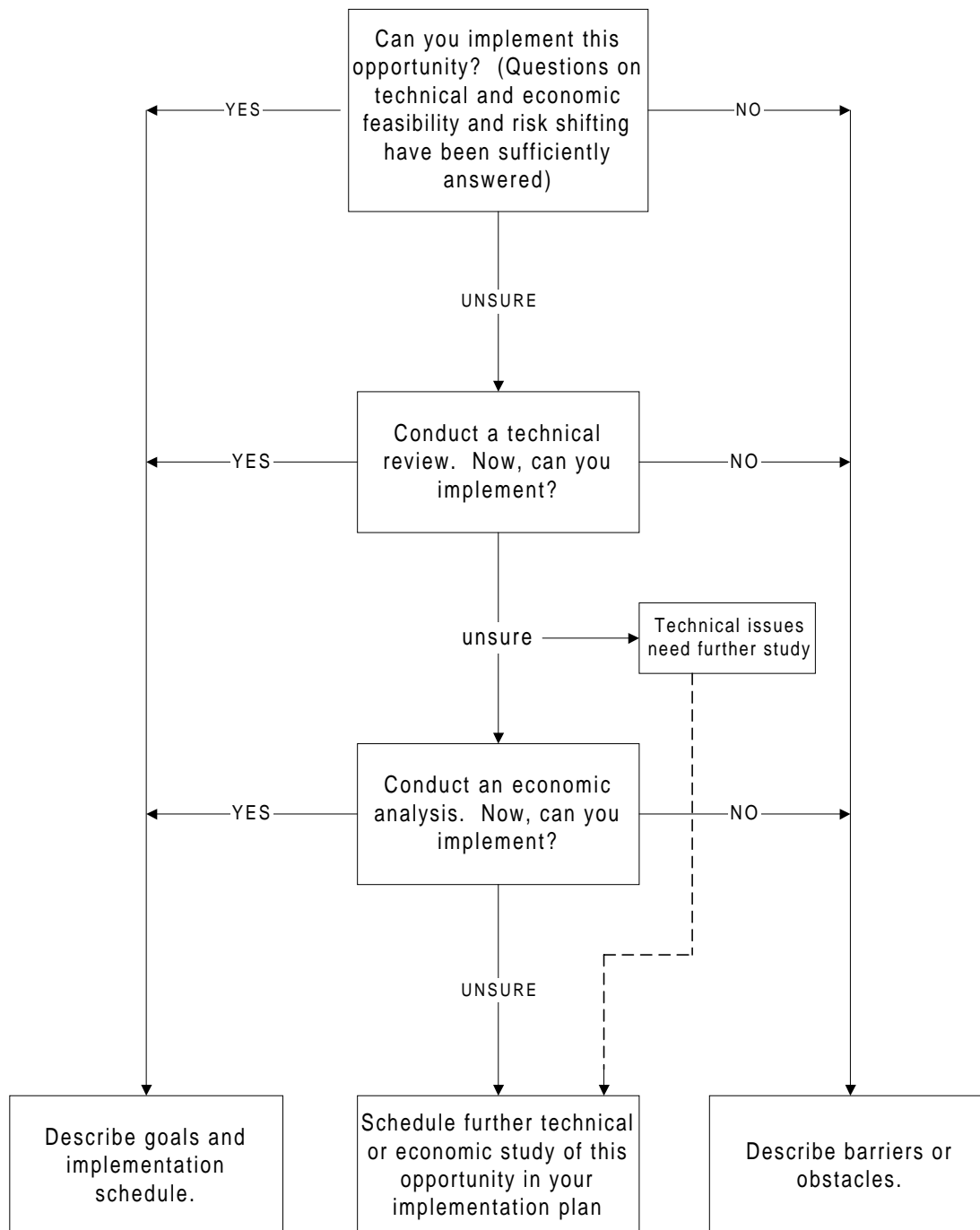
- Is this opportunity technically feasible, that is, would it work (regardless of costs, which will be considered next)? In evaluating technical feasibility, you will probably want to consider factors like production, product quality, worker health and safety, proven track record and reliability, worker training requirements, etc. Appendix I contains an optional checklist that may help you conduct this evaluation.
- Will environmental or health risks be reduced and not shifted by this opportunity?
- Is it economically feasible? Is there a cost savings, either immediate or over a reasonable time period, to implementing this opportunity? Or, if there are no savings, are the costs reasonable enough that it could be implemented for reasons other than cost savings? In evaluating costs, try to identify all costs and savings of the opportunity compared with the current practice, including those that might normally be overlooked or “hidden” in

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overhead. There are many ways to do an economic analysis of a pollution prevention opportunity. Appendix II includes one method for doing the analysis. Look at Appendix III for information on how to factor potential risk or liabilities in the analysis.

- Is this opportunity selected for implementation, rejected, or does it need further study?
- Are there impediments to implementing the opportunity?

**Figure B**  
Decision Flow Chart



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## Worksheet H

### Pollution Prevention Opportunities for Each Process -030(2)(c ) and (d)

*Note: Make a copy of this worksheet for each opportunity you identify.*

Facility Name: \_\_\_\_\_

Process Name: \_\_\_\_\_

Opportunity Name: \_\_\_\_\_

Opportunity Number (code): \_\_\_\_\_

Describe research that was conducted to identify and/or evaluate opportunities for this process below. If this research is documented in other reports, it must be available for review.

Give a description of the opportunity:

Is this opportunity: (check all that apply)

HS Use Reduction\_\_\_\_\_ HW Reduction\_\_\_\_\_ HW Converted to Product\_\_\_\_\_ Recycling\_\_\_\_\_ Treatment\_\_\_\_\_

Is this opportunity technically feasible? Yes\_\_\_\_\_ No\_\_\_\_\_

If not, explain:

Will environmental or health risks be reduced and not shifted by this opportunity?

Yes\_\_\_\_\_ No\_\_\_\_\_

Explain any shifting of risks.

Considering costs and benefits, and intangibles such as reduced risks, is this opportunity economically feasible?

Yes\_\_\_\_\_ No\_\_\_\_\_ More analysis is needed\_\_\_\_\_

Briefly explain the method you used to perform your economic analysis.

Is this opportunity:

Selected for implementation\_\_\_\_\_ Rejected\_\_\_\_\_ Scheduled for further study\_\_\_\_\_

If this opportunity has been selected for implementation, to the extent that cost savings were identified during the economic analysis, identify them here. \$ \_\_\_\_\_

Are there impediments to implementing the opportunity? List them below.



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## Guidance for Worksheet I

### Opportunities not Linked to a Specific Process 030(2)(c ) and (d)

#### Examples of non- process specific opportunities

- Establishing a pollution prevention training program for employees
- Charging hazardous materials management and contingency costs back to departments using the materials.
- Requiring vendors to take back samples, unused chemicals and containers.
- Instituting a review process for new chemicals to assure selection of the least-hazardous material.

Use **Worksheet I** to describe opportunities that apply to several processes or to your whole facility.

The benefits of implementing these types of opportunities may be more intuitive than quantifiable, so the process for evaluating and selecting these may be different than used for process specific opportunities. These benefits, however, can be significant in comparison to normally small investments of time and money. These opportunities should not be overlooked.

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## Worksheet I

### Opportunities not Linked to a Specific Process

Facility Name: \_\_\_\_\_

Use this worksheet to describe opportunities that apply to several processes or to your whole facility.

BE SURE TO INCLUDE THE SELECTED OPPORTUNITIES FROM THIS WORKSHEET ON WORKSHEET J, SELECTED OPPORTUNITIES, GOALS AND IMPLEMENTATION PLAN

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## Guidance for Worksheet J

### Selected Opportunities, Goals, Implementation Plan

**Worksheet J** lists your selected opportunities in order to establish performance goals and estimate action dates.

#### Selected Opportunities:

The rule requires the identification of:

*. . . a selection of opportunities to be implemented in accordance with the evaluation conducted in sub-division (d). For each selected opportunity, the process(es) it affects shall be identified, and estimates of the amount, by weight, of the reduction of hazardous substances or products containing hazardous substances and hazardous waste reduction which would be achieved through implementation shall be stated, as well as the amount of hazardous wastes recycled or treated as a result of implementation shall be included. -030(2)(e)*

**Guidance:** Transfer the information on opportunities, or phases of opportunities, selected for implementation from Worksheet(s) H and I to the table on Worksheet J. For each opportunity, identify the process(es) affected. Then estimate the amount, by weight, of the hazardous substances or hazardous wastes that will be reduced, recycled or treated as the result of implementing the opportunity. The estimates should reflect the amounts that will be reduced, or the change in amounts recycled or treated annually on an on-going basis once the opportunity is implemented (not the total amounts recycled or treated each year).

Do not add estimated annual achievements together for each year that the opportunity is implemented. Instead, indicate only what you expect the results of implementation to be for one year, with the assumption that the achievement will be sustained in succeeding years.

You may not be able to estimate the effects of implementing individual opportunities if you anticipate implementing several at one time that will have common benefits. If this is the case for you, combine these opportunities on one line with a single estimate of effects provided. See the second example on Worksheet J.

Some opportunities may lead to benefits other than, or in addition to, measurable reductions. These benefits may be qualitative in nature, such as reduced toxicity or risk, cost savings, improved awareness or better materials management. These should be described on Worksheet J as “other benefits.”

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## Performance Goals:

The rule requires you to identify:

*. . . specific performance goals in each of the following categories, expressed in numeric terms:*

- i) hazardous substances or products containing hazardous substances to be reduced or eliminated from use;*
- ii) hazardous wastes to be reduced or eliminated through hazardous waste reduction techniques;*
- iii) materials or hazardous wastes to be recycled;*
- iv) hazardous wastes to be treated.*

*If the establishment of numeric performance goals is not practicable, the performance goals shall include a clearly stated list of objectives designed to lead to the establishment of numeric goals as soon as practicable. . . .*

-030(2)(g)

**Guidance:** How you determine your performance goals is optional. They may, for example, reflect policy goals. Your goals may be higher than the sum of the listed opportunities selected for implementation. If so, complete the last row in the table.

Otherwise, use the “Opportunity Totals” row to sum each column of numbers, and these totals will serve as your performance goals.

## Five-Year Implementation Plan

The rule requires:

*A five year implementation schedule, which shall display planned implementation activities for each of the five calendar years following completion of the plan...*

-030(2)(h)

**Guidance:** Complete the right hand column to indicate when over the five year life of your plan you expect to initiate action on each listed opportunity. Milestone dates may be shown if an opportunity is to be implemented in phases.

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## Worksheet J

### Selected Opportunities, Goals, Implementation Plan -030(2)(e), (g) and (h)

Facility Name: \_\_\_\_\_

Please use footnotes, as needed, to clarify entries.

Opportunity Name	Process(es) Affected	Annual Quantities Reduced as a Result of Implementation		Changes in Annual Quantities Recycled or Treated as a Result of Implementaion		Estimated Action Date (month/year)
		Haz. Sub. Use Reduction (lbs./yr.)	Haz. Waste Reduction (lbs./yr.)	Recycling (lbs./yr.)	Treatment (lbs./yr.)	
EXAMPLES: Opp. #1	Pro. # 1A	1,000				5/98
Opps. #2,3, 4	Pro. # 2, 3	3,000				7/99
Opportunity Totals						
Performance Goals						

If it's not practical to establish numeric goals, list objectives designed to lead to goals as soon as practicable:

#### Other Benefits:

What other benefits do you hope to achieve by implementing the above opportunities, e.g. cost savings, improved awareness, etc.?

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## Guidance for Worksheet K

### Research Labs

If you have a research laboratory or laboratories, you may develop a general plan that describes policies and procedures for personnel using hazardous substances or generating hazardous waste through laboratory research.

The rule provides that:

*... for research laboratories, the plan may include, in lieu of all the detailed requirements of this sub-section, a description of policies and procedures to be followed by laboratory personnel regarding the use of hazardous substances and the generation of hazardous wastes through laboratory research. These policies and procedures must be consistent with the waste reduction priorities defined in this chapter. -030(2)(k)*

A research laboratory is defined as a facility that performs the majority of its work in an experimental or investigative capacity. Because its work is normally unique in nature, its use of hazardous substances and hazardous waste generation is not predictable. The work of a research lab therefore exhibits characteristics of diversity, variability and originality. By comparison, a testing laboratory performs routine, standardized, often repetitive analyses.

Worksheet K may be used to describe applicable policies and procedures. In developing your plan, give top priority to reduction of hazardous substance use and hazardous waste generation, then to recycling, and lastly to treatment.

Note that in addition to Worksheet K, research laboratories must also submit Worksheets A through D if submitting a full plan. If an Executive Summary is being submitted, then only Worksheet K needs to be included.

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## Worksheet K

### Research Labs, Policies and Procedures - 030(2)(k)

Facility Name: \_\_\_\_\_

If applicable, describe the policies and procedures to be followed by research personnel regarding the use of hazardous substances and the generation of hazardous wastes through research. Also describe the processes and/or facilities to which they apply.



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## Guidance for Worksheet L

### Executive Summary Addenda

Most facilities that prepare pollution prevention plans elect to submit the full plan to Ecology rather than prepare a separate executive summary. The full plan then becomes available for public inspection. If an executive summary is submitted, it becomes the public document, and the full plan remains at the facility.

If you choose to prepare an executive summary, there are several areas where summary information is permitted. Worksheet L specifies these instances. Otherwise, the same level of information as required in the full plan is also required in an executive summary.

For executive summaries, the rule provides for:

*A list of the type and amount of each hazardous waste and products containing hazardous substances as identified in WAC 173-307-030(2)(a). -040(4)*

*A brief description of each process in the facility that generates hazardous waste or uses products containing hazardous substances as listed in subdivision (d). -040(5)*

*A summary of all further hazardous substance use reduction, hazardous waste reduction, recycling, and treatment opportunities identified. Opportunities shall be identified first for hazardous substance use reduction and hazardous waste reduction, secondly for recycling, and lastly for treatment. A statement of the reason(s) for rejecting any opportunity from further consideration and a summary of all identified impediments to implementing opportunities shall be identified. -040(7)*

An executive summary can be constructed by using:

- ☒ **Worksheet A,**
- ☒ **Worksheet B,**
- ☒ **Worksheet D,**
- ☒ **Worksheet E,** or a list of the types and amounts of hazardous substances used,
- ☒ **Worksheet F,** or a list of the types and amounts of hazardous waste generated,
- ☒ **Worksheet G,** or brief descriptions of each process,
- ☒ Either **Worksheets H and I,** or **Worksheet L** in lieu of both **Worksheets H and I,** and
- ☒ **Worksheet J.**

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## Worksheet L

### Executive Summary Addenda -040

**Facility Name:** \_\_\_\_\_

*Complete this worksheet **only** if you are submitting an Executive Summary, not a full plan. This worksheet must then be accompanied by the other worksheets and/or information specified on page 38.*

#### **Summary of Pollution Prevention Opportunities**

Provide a summary of the opportunities identified on Worksheet H. Group the opportunities by the categories hazardous substance use reduction, hazardous waste reduction, recycling, and treatment.

#### **Reasons for Rejecting Opportunities**

Provide a summary statement of the reasons for rejecting opportunities from further consideration.

#### **Impediments to Implementation**

Provide a summary of all identified impediments to implementing opportunities.

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## Technical Evaluation

Facility Name \_\_\_\_\_

Process \_\_\_\_\_

Opportunity \_\_\_\_\_

Make as many copies as necessary.

		Yes	No	Not Sure
1.	Have you determined that this option has a proven track record?	___	___	___
2.	Are you certain that this option will create less waste, decrease the use of hazardous substances or promote recycling?	___	___	___
3.	Will this option adversely affect productivity?	___	___	___
4.	Will this option require additional staff?	___	___	___
5.	Are you certain that this option will not simply move waste problems from one form to another or from one person to another (e.g., from solid wastes to air emissions)?	___	___	___
6.	Is your plant layout and design capable of incorporating this option?	___	___	___
7.	Will the vendor guarantee this option?	___	___	___
8.	Have you determined that this option will improve or maintain worker safety and health?	___	___	___
9.	Are materials and parts readily available?	___	___	___
10.	Can this option be easily serviced?	___	___	___
11.	Are other businesses using this option?	___	___	___
12.	Is there vendor support available for start-up, testing, training, and repair?	___	___	___
13.	Will this option adversely affect product quality?	___	___	___
14.	Are adequate utilities available to accommodate this option?	___	___	___
15.	Will special employee training be required?	___	___	___

Identify whether, and if so how, this opportunity would result in a shifting of risk(s) from one part of a process, environmental medium or product to another.

Describe any impediments.

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### Economic Analysis of Pollution Prevention Opportunities

The purpose of an economic analysis is to identify all costs that might change if you implemented a pollution prevention opportunity and compare them to the costs of the current practice. This is useful when the decision whether to implement the opportunity depends on its economic benefit. Any method of economic analysis is acceptable, as long as it seeks to capture total costs. Facilities are encouraged to use the method they are most comfortable with. Many businesses use the payback method to make financial decisions. The payback method simply divides the investment by the annual savings to calculate the time needed to pay back the investment. Businesses commonly accept payback periods of two to three years as good investments. This method does not account for the time value of money, which could be important for projects involving major capital expenses. Technical assistance staff in Ecology's regional offices can help you with this and other methods of analysis.

In addition to quantifiable costs, potential liabilities and risks of the opportunity compared to the current process needs to be a component of the analysis. **Appendix III** includes a discussion and worksheet on risks and needs to be used in conjunction with the economic analysis.

The worksheet on the following page may be of use in assessing costs. In the absence of an established cost accounting system, costs may have to be estimated. Use a copy of the worksheet for each pollution prevention opportunity being analyzed.

Economic Analysis					
<b>Opportunity Name</b> _____ Estimate, for each of the next five years, the <i>difference</i> in cash flows to the nearest thousand dollars for each of the following costs if the above pollution prevention opportunity is implemented. If the cash flow does not change, leave the space blank or enter zero.					
Costs	Year 1	Year 2	Year 3	Year 4	Year 5
<b>Capital Costs</b>					
Initial Capital Expense <sup>1</sup>					
Depreciation Tax Benefit <sup>2</sup>					
Equipment Salvage <sup>3</sup>					
<b>Net Capital Expense<sup>4</sup></b>					
<b>Facility, Process, and Compliance Costs</b>					
Labor Costs <sup>5</sup>					
Chemical / Material Costs					
Improved Yield / Reduced Scrap					
Utility Costs <sup>6</sup>					
Floor Space / Buildings <sup>7</sup>					
Allocated Facility Expense <sup>8</sup>					
Production <sup>9</sup>					
Inventory Costs					
Other Process Costs					
Disposal Costs					
Permit Fees					
Monitoring / Analytical Costs					
Record Keeping					
Oversight / Compliance Assurance					
Insurance Expense <sup>10</sup>					
Annual Reporting					
Other Regulatory Expense (Fire, L&I, PSAPCA, Sewer, etc.)					
Compliance/other Training					
Other					
<b>Total Savings</b>					

*Compare net capital expense to total savings on following page*

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## Opportunity Economic Analysis Summary:

Net Capital Expense (Sum of the five years) \$ \_\_\_\_\_

Total Savings (Sum of savings for all cost items for all five years) \$ \_\_\_\_\_

The results of your economic analysis and risk analysis ( See Appendix III) will be reflected on Worksheet H.

### Notes:

1. Initial capital expense is the difference between costs required to implement the pollution prevention opportunity and all new expenses that would be required for the existing process.
2. For the sake of this analysis, a five year linear depreciation schedule is recommended. The depreciation benefit is the depreciation multiplied by the appropriate tax rate under provisions of the Federal corporate net income tax. State taxes are not affected by depreciation. Remember that it is the *difference* in the depreciation benefits between the pollution prevention opportunity and the existing process which is recorded.
3. Record the salvage value of equipment from the existing process which would be made surplus by implementing the opportunity.
4. In comparing the cost of a pollution prevention opportunity to its benefits (savings), it is the net difference in capital costs between the opportunity and the existing process which must be considered. To calculate the net difference in capital costs, deduct the difference in depreciation benefits and the salvage value of equipment made surplus by the opportunity from the initial difference in capital costs.
5. This should be the *fully burdened* labor rate times the number of hours saved (or expended) by the pollution prevention opportunity. If the opportunity takes more labor, this value will be negative.
6. Record reductions in those utility costs which are directly attributable to the process which would be replaced by the pollution prevention opportunity. These utility costs are distinct from "allocated facility expenses" below.
7. Enter the difference in the required amount of square feet times the annual cost per square foot. This should include property taxes and property insurance. If property insurance is reduced because of reduced risk of fire or other property damage attributable to the pollution prevention opportunity, this should be recorded. Liability insurance is listed under a separate row in this table.
8. Allocated facility costs include heating, ventilation, lighting, and janitorial expense traditionally allocated to overhead. The savings in these costs resulting from implementing the pollution prevention opportunity can be estimated by multiplying the total miscellaneous facility expense times the percentage of square feet required for chemical / waste storage, treatment, and handling. If the space requirement does not change, enter zero.



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9. Production includes increased (or decreased) production attributable to implementing the pollution prevention opportunity. If processes are eliminated or simplified, production generally increases.
  10. Enter reductions in liability, workers compensation expense, and other insurance which may be reduced as result of implementing the pollution prevention opportunity.

## Risk Analysis

As an adjunct to economic analysis, it is important to account for risks or potential liabilities when evaluating pollution prevention opportunities. There are no standards or widely recognized methods for doing this, as the estimates of potential liability depend on many assumptions. It is not required that potential financial liabilities related to the use of hazardous substances or the generation of hazardous waste be quantified. They should, however, be considered.

To make a decision about whether to implement a pollution prevention opportunity, it is usually sufficient to compare the relative risks of the current practice and the opportunity. A simple scoring system allows one to identify whether the risks would increase, decrease or shift if the opportunity is implemented.

The following form may be used to help compare and analyze relative risk. The number of risk factors, and the scoring weights, are deliberately kept small to make the form easy to use. Facilities should decide what additional factors are important to their decision-making, and include them as well.

The results of your risk analysis and economic analysis (See Appendix II) will be reflected on Worksheet H.

Risk Analysis		
Current Practice	Risk Factors	Pollution Prevention Alternative
Name:		Name:
Score: low = 1; medium = 3 high = 9; unknown = 3		Score: low = 1; medium = 3 high = 9; unknown = 3
	property contamination	
	accidents	
	health effects	
	compliance violations	
	disposal liability	
	other	
	<b>Total Risk Score</b>	

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## Appendix IV

### Interrelated Facility Checklist

Appendix IV includes a checklist and other guidance to determine if multiple facilities qualify for a single plan and fee. Contact your Ecology regional office for more information.

Complete this checklist to determine if some or all of your facilities are eligible for a single plan/single fee.

	Yes	No	Not Sure
Are the facilities owned or operated by the same person/company/agency?	_____	_____	_____
In comparing the processes of one facility to another, are a significant majority of those processes substantially similar, inasmuch as they:			
Are essentially interchangeable?	_____	_____	_____
Use similar equipment?	_____	_____	_____
Use similar materials?	_____	_____	_____
Produce similar products or services?	_____	_____	_____
Generate similar hazardous waste?	_____	_____	_____

If you answer “yes” to all of the above questions, you should continue the process by preparing documentation to support your “yes” answers. The documentation should follow the attached guidelines. Any “no” answer probably means you do not qualify and need not do anything further. If you are “not sure”, you may wish to consult with Ecology staff.

If you do proceed, submit the checklist and documentation to one of the regional office listed below. Ecology will review the information and notify you in writing of the determination.

Northwest Regional Office  
Department of Ecology  
3190 160th Ave SE  
Bellevue, WA 98008-5452  
Dennis Johnson  
(206) 649-7040

Eastern Regional Office  
Department of Ecology  
N 4601 Monroe, Suite 100  
Spokane, WA 99205-5301  
Doug Jayne  
(509) 456-6171

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Southwest Regional Office  
Department of Ecology  
PO Box 47775  
Olympia, WA 98504-7775  
Hugh O'Neill  
(360) 407-6354

Central Regional Office  
Department of Ecology  
15 W Yakima Ave, Suite 200  
Yakima, WA 98902-3401  
Mark Benedict  
(509) 757-2803

These guidelines will assist you in documenting how your facilities are interrelated to the extent that they may qualify for the single plan/single fee provision. The amount of information submitted will depend on the size and complexity of your individual facilities. If you have questions on these guidelines, contact the appropriate Ecology regional office.

- I. Identify each facility being considered by site location and identification number. Provide an overview of the facilities, including information on their single ownership/operation.
- II. Quantify the degree to which a “significant majority” of the processes are similar between facilities.
- III. Explain how processes are “essentially interchangeable” between facilities.
- IV. Describe the equipment used in these processes and the degree to which it is similar.
- V. Describe the raw materials used in these processes, particularly any hazardous substances, and the degree to which they are similar.
- VI. Describe the end products or services of each facility and the degree to which they are similar.
- VII. Describe the hazardous waste generated by each process or service and the degree to which it is similar.
- VIII. Provide any other information you feel will help support your position.

Submit this information and the checklist to the Department of Ecology. The department will review the information and make a determination of eligibility. You may be called for clarification or more information, and a site visit may be necessary. You will be notified of the decision in writing.

## List of Hazardous Substances

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### SECTION 313 TOXIC CHEMICAL LIST FOR REPORTING YEAR 1995 (including Toxic Chemical Categories)

*This list was modified by Department of Ecology on August 29, 1996 to reflect recent EPA delistings.*

Specific toxic chemicals with CAS Number are listed in alphabetical order beginning on the next page. A list of the same chemicals in CAS Number order begins at the end of the alphabetical list of toxic chemicals. Covered chemical categories follow.

Certain toxic chemicals listed in this table have parenthetical “qualifiers.” These qualifiers indicate that these toxic chemicals are subject to the section 313 reporting requirements if manufactured, processed, or otherwise used in a specific form. The following chemicals are reportable only if they are manufactured, processed, or otherwise used in the specific form(s) listed below:

<u>Chemical</u>	<u>CAS Number</u>	<u>Qualifier</u>
<b>Aluminum</b> (fume or dust)	7429-90-5	<b><u>Only</u></b> if it is in a fume or dust form.
<b>Aluminum oxide</b> (fibrous forms)	1344-28-1	<b><u>Only</u></b> if it is a fibrous form.
<b>Ammonia</b> (includes anhydrous ammonia and aqueous ammonia from water dissociable ammonium salts and other sources; 10 percent of total aqueous ammonia is reportable under this listing)	7664-41-7	<b><u>Only</u></b> 10 percent of aqueous forms. 100 percent of anhydrous forms.
<b>Asbestos</b> (friable)	1332-21-4	<b><u>Only</u></b> if it is a friable form.
<b>Phosphorus</b> (yellow or white)	7723-14-0	<b><u>Only</u></b> if it is a yellow or white form.
<b>Sulfuric acid</b> (acid aerosols including mists, vapors, gas, fog, and other airborne species of any particle size)	7664-93-9	<b><u>Only</u></b> if it is an aerosol.
<b>Vanadium</b> (fume or dust)	7440-62-2	<b><u>Only</u></b> if it is in a fume or dust form.
<b>Zinc</b> (fume or dust)	7440-66-6	<b><u>Only</u></b> if it is in a fume or dust form.

The qualifier for the following two chemicals is based on the chemical activity rather than the form of the chemical. These chemicals are subject to EPCRA section 313 reporting requirements only when the indicated activity is performed.

<u>Chemical</u>	<u>CAS Number</u>	<u>Qualifier</u>
<b>Isopropyl alcohol</b> (manufacturing - strong acid process, no supplier notification)	67-63-0	<b>Only</b> if it is being manufactured by the strong process.
<b>Saccharin</b> (manufacturing, no supplier notification)	81-07-2	<b>Only</b> if it is being manufactured.

There are no supplier notification requirements for isopropyl alcohol and saccharin since the processors and users of these chemicals are not required to report. Manufacturers of these chemicals do not need to notify their customers that these are reportable EPCRA section 313 chemicals.

***Note: Chemicals may be added to or deleted from the list. The Emergency Planning and Community Right-to-Know Information Hotline, (800) 535-0202 or (703) 412-9877, will provide up-to-date information on the status of these changes. See section B.4.b of the instructions for more information on the de minimis values listed below.***

## a. Alphabetical List of TRI Chemicals

Number	Chemical Name	De Minimis Concentration	CAS Number	Chemical Name	De Minimis Concentration
71751-41-2	Abamectin [Avermectin B1]	1.0	7664-41-7	Ammonia (includes anhydrous ammonia and aqueous ammonia from water dissociable ammonium salts and other sources; 10 percent of total aqueous ammonia is reportable under this listing)	1.0
30560-19-1	Acephate (Acetylphosphoramidothioic acid O,S-dimethyl ester)	1.0		Anilazine	
75-07-0	Acetaldehyde	0.1			
60-35-5	Acetamide	0.1			
75-05-8	Acetonitrile	1.0			
98-86-2	Acetophenone	1.0	101-05-3		1.0
53-96-3	2-Acetylaminofluorene	0.1		[4,6-Dichloro-N-(2-chlorophenyl) 1,3,5-triazin-2-amine]	1.0
62476-59-9	Acifluorfen, sodium salt [5-(2-Chloro-4-(trifluoromethyl)-phenoxy)-2-nitro-benzoic acid, sodium salt]	1.0	62-53-3	Aniline	1.0
			90-04-0	o-Anisidine	0.1
			104-94-9	p-Anisidine	1.0
107-02-8	Acrolein	1.0	134-29-2	o-Anisidine hydrochloride	0.1
79-06-1	Acrylamide	0.1	120-12-7	Anthracene	1.0
79-10-7	Acrylic acid	1.0	7440-36-0	Antimony	1.0
107-13-1	Acrylonitrile	0.1	7440-38-2	Arsenic	0.1
15972-60-8	Alachlor	1.0	1332-21-4	Asbestos (friable)	0.1
116-06-3	Aldicarb	1.0	1912-24-9	Atrazine	0.1
309-00-2	Aldrin	1.0		(6-Chloro-N-ethyl-N'-(1-methylethyl)-1,3,5-triazine-2,4-diamine)	
	[1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a, 5,8,8a-hexahydro-(1.alpha., 4.alpha.,4a.beta.,5.alpha.,8.alpha., 8a.beta.)-]		7440-39-3	Barium	1.0
			22781-23-3	Bendiocarb	1.0
28057-48-9	d-trans-Allethrin [d-trans-Chrysanthemic acid of d-allethrine]	1.0		[2,2-Dimethyl-1,3-benzodioxol-4-ol methylcarbamate]	1.0
			1861-40-1	Benfluralin (N-Butyl-N-ethyl-2,6-dinitro-4-(trifluoromethyl)-benzenamine)	
107-18-6	Allyl alcohol	1.0			
107-11-9	Allylamine	1.0			
107-05-1	Allyl chloride	1.0	17804-35-2	Benomyl	1.0

Number	Chemical Name	De Minimis Concentration	CAS Number	Chemical Name	De Minimis Concentration
7429-90-5	Aluminum (fume or dust)	1.0	98-87-3	Benzal chloride	1.0
20859-73-8	Aluminum phosphide	1.0	55-21-0	Benzamide	1.0
1344-28-1	Aluminum oxide (fibrous forms)	1.0	71-43-2	Benzene	0.1
834-12-8	Ametryn	1.0	92-87-5	Benzidine	0.1
	(N-Ethyl-N'-(1-methylethyl)-6-(methylthio)-1,3,5,-triazine-2,4-diamine)		98-07-7	Benzoic trichloride (Benzotrichloride)	0.1
117-79-3	2-Aminoanthraquinone	0.1	98-88-4	Benzoyl chloride	1.0
60-09-3	4-Aminoazobenzene	0.1	94-36-0	Benzoyl peroxide	1.0
92-67-1	4-Aminobiphenyl	0.1	100-44-7	Benzyl chloride	1.0
82-28-0	1-Amino-2-methylantraquinone	0.1	7440-41-7	Beryllium	0.1
33089-61-1	Amitraz	1.0	82657-04-3	Bifenthrin	1.0
61-82-5	Amitrole	0.1	92-52-4	Biphenyl	1.0
			111-91-1	Bis(2-chloroethoxy)methane	1.0
			111-44-4	Bis(2-chloroethyl) ether	0.1
			542-88-1	Bis-chloromethyl) ether	1.0
			108-60-1	Bis(2-chloro-1-methylethyl)-ether	1.0
56-35-9	Bis(tributyltin) oxide	1.0	5234-68-4	Carboxin	1.0
10294-34-5	Boron trichloride	1.0		(5,6-Dihydro-2-methyl-N-phenyl-1,4-Oxathiin-3-carboxamide)	1.0
7637-07-2	Boron trifluoride	1.0			
314-40-9	Bromacil	1.0	120-80-9	Catechol	1.0
	(5-Bromo-6-methyl-3-(1-methylpropyl)-2,4-(1H,3H)-pyrimidinedione)		2439-01-2	Chinomethionat	1.0
53404-19-6	Bromacil, lithium salt	1.0		(6-Methyl-1,3-dithiolo[4,5-b]quinoxalin-2-one)	1.0
	(2,4-(1H,3H)-Pyrimidinedione,5-bromo-6-methyl-3-(1-methylpropyl), lithium salt)		133-90-4	Chloramben	
7726-95-6	Bromine	1.0		[Benzoic acid, 3-amino-2,5-dichloro-]	
35691-65-7	1-Bromo-1-(bromomethyl)-1,3-propanedicarbonitrile	1.0	57-74-9	Chlordane	1.0
353-59-3	Bromochlorodifluoromethane (Halon 1211)	1.0		[4,7-Methanoindan, 1,2,3,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-]	
75-25-2	Bromoform	1.0	115-28-6	Chlorendic acid	0.1
74-83-9	Bromomethane (Methyl bromide)	1.0	90982-32-4	Chlorimuron ethyl	1.0
52-51-7	2-Bromo-2-nitropropane-1,3-diol (Bronopol)	1.0		(Ethyl-2-[[[(4-chloro-6-methoxyprimidin-2-yl)-carbonyl]-amino]sulfonyl]benzoate)	
75-63-8	Bromotrifluoromethane (Halon 1301)	1.0	7782-50-5	Chlorine	1.0
1689-84-5	Bromoxynil	1.0	10049-04-4	Chlorine dioxide	1.0
	(3,5-Dibromo-4-hydroxybenzonitrile)		79-11-8	Chloroacetic acid	1.0
1689-99-2	Bromoxynil octanoate	1.0	532-27-4	2-Chloroacetophenone	1.0
	(Octanoic acid, 2,6-dibromo-4-cyanophenylester)		4080-31-3	1-(3-Chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride	1.0
357-57-3	Brucine	1.0	106-47-8	p-Chloroaniline	1.0
106-99-0	1,3-Butadiene	0.1	108-90-7	Chlorobenzene	1.0
141-32-2	Butyl acrylate	1.0	510-15-6	Chlorobenzilate	1.0
71-36-3	n-Butyl alcohol	1.0		[Benzeneacetic acid, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-hydroxy-,ethyl ester]	
78-92-2	sec-Butyl alcohol	1.0	75-68-3	1-Chloro-1,1-difluoroethane (HCFC-142b)	1.0
75-65-0	tert-Butyl alcohol	1.0	75-45-6	Chlorodifluoromethane (HCFC-22)	1.0
106-88-7	1,2-Butylene oxide	1.0	75-00-3	Chloroethane (Ethyl chloride)	1.0



Number	Chemical Name	De Minimis Concentration	CAS Number	Chemical Name	De Minimis Concentration
123-72-8	Butyraldehyde	1.0	67-66-3	Chloroform	0.1
7440-43-9	Cadmium	0.1	74-87-3	Chloromethane (Methyl chloride)	1.0
156-62-7	Calcium cyanamide	1.0	107-30-2	Chloromethyl methyl ether	0.1
133-06-2	Captan	1.0	563-47-3	3-Chloro-2-methyl-1-propene	0.1
63-25-2	[1H-Isoindole-1,3(2H)-dione, 3a,4,7,7a-tetrahydro-2-[(trichloromethyl)thio]-] Carbaryl [1-Naphthalenol, methylcarbamate]	1.0	104-12-1	p-Chlorophenyl isocyanate	1.0
1563-66-2	Carbofuran	1.0	76-06-2	Chloropicrin	1.0
75-15-0	Carbon disulfide	1.0	126-99-8	Chloroprene	1.0
56-23-5	Carbon tetrachloride	0.1	542-76-7	3-Chloropropionitrile	1.0
463-58-1	Carbonyl sulfide	1.0	63938-10-3	Chlorotetrafluoroethane	1.0
2837-89-0	2-Chloro-1,1,1,2-tetrafluoroethane (HCFC_124)	1.0	354-25-6	1-Chloro-1,1,2,2-tetrafluoroethane (HCFC-124a)	1.0
1897-45-6	Chlorothalonil	1.0	21725-46-2	Cyanazine	1.0
95-69-2	[1,3-Benzenedicarbonitrile, 2,4,5,6-tetrachloro-] p-Chloro-o-toluidine	0.1	1134-23-2	Cycloate	1.0
75-88-7	2-Chloro-1,1,1-trifluoroethane (HCFC-133a)	1.0	110-82-7	Cyclohexane	1.0
75-72-9	Chlorotrifluoromethane (CFC-13)	1.0	108-93-0	Cyclohexanol	1.0
460-35-5	3-Chloro-1,1,1-trifluoroethane (HCFC-253fb)	1.0	68359-37-5	Cyfluthrin	1.0
5598-13-0	Chlorpyrifos methyl (O,O-Dimethyl-O-(3,5,6-trichloro-2-pyridyl)phosphorothioate)	1.0	68085-85-8	(3-(2,2-Dichloroethenyl)-2,2-dimethylcyclopropanecarboxylic acid, cyano(4-fluoro-3-phenoxyphenyl) methyl ester) Cyhalothrin	1.0
64902-72-3	Chlorsulfuron	1.0	94-75-7	(3-(2-Chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylic acid cyano(3-phenoxyphenyl)-methyl ester)	1.0
7440-47-3	(2-Chloro-N-[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-amino]carbonyl] benzenesulfonamide)	1.0	533-74-4	2,4-D	1.0
4680-78-8	Chromium	0.1	53404-60-7	[Acetic acid, 2,4-dichlorophenoxy]-	1.0
6459-94-5	C.I. Acid Green 3	1.0	94-82-6	Dazomet	1.0
569-64-2	C.I. Acid Red 114	0.1	1929-73-3	(Tetrahydro-3,5,-dimethyl-2H-1,3,5-thiadiazine-2-thione)	1.0
989-38-8	C.I. Basic Green 4	1.0	94-80-4	Dazomet, sodium salt	1.0
1937-37-7	C.I. Basic Red 1	1.0	2971-38-2	(Tetrahydro-3,5,-dimethyl-2H-1,3,5-thiadiazine-2-thione, ion(1-), sodium)	1.0
2602-46-2	C.I. Direct Black 38	0.1	1163-19-5	2,4-DB	1.0
28407-37-6	C.I. Direct Blue 6	0.1	13684-56-5	2,4,-D butoxyethyl ester	0.1
16071-86-6	C.I. Direct Blue 218	0.1	1928-43-4	2,4-D butyl ester	0.1
2832-40-8	C.I. Direct Brown 95	1.0	53404-37-8	2,4-D chlorocrotyl ester	0.1
3761-53-3	C.I. Disperse Yellow 3	0.1	2303-16-4	Decabromodiphenyl oxide	1.0
81-88-9	C.I. Food Red 5	1.0	615-05-4	Desmedipham	1.0
3118-97-6	C.I. Food Red 15	1.0	39156-41-7	2,4-D 2-ethylhexyl ester	0.1
97-56-3	C.I. Solvent Orange 7	1.0	101-80-4	2,4-D 2-ethyl-4-methylpentyl ester	0.1
842-07-9	C.I. Solvent Yellow 3	1.0	95-80-7	Diallate	1.0
492-80-8	C.I. Solvent Yellow 14	0.1		[Carbamothioic acid, bis-(1-methylethyl)-S-(2,3-dichloro-2-propenyl) ester]	1.0
128-66-5	C.I. Solvent Yellow 34 (Auramine)	1.0		2,4-Diaminoanisole	0.1
7440-48-4	C.I. Vat Yellow 4	1.0		2,4-Diaminoanisole sulfate	0.1
7440-50-8	Cobalt	1.0		2,4'-Diaminodiphenyl ether	0.1
8001-58-9	Copper	0.1		2,4-Diaminotoluene	0.1
120-71-8	Creosote	0.1			
	p-Cresidine	0.1			

Number	Chemical Name	De Minimis Concentration	CAS Number	Chemical Name	De Minimis Concentration
108-39-4	m-Cresol	1.0	25376-45-8	Diaminotoluene (mixed isomers)	0.1
95-48-7	o-Cresol	1.0			
106-44-5	p-Cresol	1.0	333-41-5	Diazinon	1.0
1319-77-3	Cresol (mixed isomers)	1.0	334-88-3	Diazomethane	1.0
4170-30-3	Crotonaldehyde	1.0	132-64-9	Dibenzofuran	1.0
98-82-8	Cumene	1.0	96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	0.1
80-15-9	Cumen hydroperoxide	1.0			
135-20-6	Cupferron	0.1	106-93-4	1,2-Dibromoethane (Ethylene dibromide)	0.1
	[Benzeneamine, N-hydroxy-N-nitroso, ammonium salt]				
124-73-2	Dibromotetrafluoroethane (Halon 2402)	1.0	422-48-0	2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC-255ba)	1.0
84-74-2	Dibutyl phthalate	1.0	422-56-0	3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)	1.0
1918-00-9	Dicamba (3,6-Dichloro-2-methoxybenzoic acid)	1.0	97-23-4	Dichlorophene (2,2'-Methylenebis(4-chlorophenol))	
99-30-9	Dichloran (2,6-Dichloro-4-nitroaniline)	1.0	120-83-2	2,4-Dichlorophenol	1.0
			78-87-5	1,2-Dichloropropane	1.0
95-50-1	1,2-Dichlorobenzene	1.0	10061-02-6	trans-1,3-Dichloropropene	0.1
541-73-1	1,3-Dichlorobenzene	1.0	78-88-6	2,3-Dichloropropene	1.0
106-46-7	1,4-Dichlorobenzene	0.1	542-75-6	1,3-Dichloropropylene	0.1
25321-22-6	Dichlorobenzene (mixed isomers)	0.1	76-14-2	Dichlorotetrafluoroethane (CFC-114)	1.0
91-94-1	3,3'-Dichlorobenzidine	0.1	34077-87-7	Dichlorotrifluoroethane	1.0
612-83-9	3,3'-Dichlorobenzidine dihydrochloride	0.1	90454-18-5	Dichloro-1,1,2-trifluoroethane	1.0
			812-04-4	1,1-Dichloro-1,2,2-trifluoroethane (HCFC-123b)	1.0
64969-34-2	3,3'-Dichlorobenzidine sulfate	0.1	354-23-4	1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123b)	1.0
75-27-4	Dichlorobromomethane	1.0			
764-41-0	1,4-Dichloro-2-butene	1.0	306-83-2	2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)	1.0
110-57-6	trans-1,4-Dichloro-2-butene	1.0			
1649-08-7	1,2-Dichloro-1,1-difluoroethane (HCFC-132b)	1.0	62-73-7	Dichlorvos	1.0
75-71-8	Dichlorodifluoromethane (CFC-12)	1.0		[Phosphoric acid, 2-dichloroethenyl dimethyl ester]	
			51338-27-3	Diclofop methyl (2-[4-(2,4-Dichlorophenoxy)phenoxy]propanoic acid, methyl ester)	1.0
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	0.1			
540-59-0	1,2-Dichloroethylene	1.0	115-32-2	Dicofol	1.0
1717-00-6	1,1-Dichloro-1-fluoroethane (HCFC-141b)	1.0		[Benzenemethanol, 4-chloro-.alpha.-4-(chlorophenyl)-.alpha.-(trichloromethyl)-]	
75-43-4	Dichlorofluoromethane (HCFC-21)	1.0	77-73-6	Dicyclopentadiene	1.0
75-09-2	Dichloromethane (Methylene chloride)	0.1	1464-53-5	Diepoxybutane	0.1
			111-42-2	Diethanolamine	1.0
127564-92-5	Dichloropentafluoropropane	1.0	38727-55-8	Diethyl ethyl	1.0
13474-88-9	1,1-Dichloro-1,2,2,3,3-pentafluoropropane (HCFC-225cc)	1.0	117-81-7	Di(2-ethylhexyl) phthalate (DEHP)	0.1
111512-56-2	1,1-Dichloro-1,2,3,3,3-pentafluoropropane (HCFC-225eb)	1.0			
			64-67-5	Diethyl sulfate	0.1
422-44-6	1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225bb)	1.0	35367-38-5	Diflubenzuron	1.0
			101-90-6	Diglycidyl resorcinol ether	0.1
431-86-7	1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC-225da)	1.0	94-58-6	Dihydrosafrole	0.1
			55290-64-7	Dimethipin	1.0
507-55-1	1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)	1.0		(2,3-Dihydro-5,6-dimethyl-1,4-dithiin 1,1,4,4-tetraoxide)	

Number	Chemical Name	De Minimis Concentration	CAS Number	Chemical Name	De Minimis Concentration
136013-79-1	1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225ea)	1.0	60-51-5	Dimethoate	1.0
128903-21-9	2,2-Dichloro-1,1,1,3,3-pentafluoropropane (HCFC-225aa)	1.0	119-90-4	3,3'-Dimethoxybenzidine	0.1
20325-40-0	3,3'-Dimethoxybenzidine dihydrochloride	0.1	94-11-1	2,4-D isopropyl ester	0.1
	(o-Dianisidine dihydrochloride)		41-53-7	2,4-Dithiobiuret	1.0
111984-09-9	3,3'-Dimethoxybenzidine hydrochloride	0.1	330-54-1	Diuron	1.0
	(o-Dianisidine hydrochloride)		2439-10-3	Dodine (Dodecylguanidine monoacetate)	1.0
124-40-3	Dimethylamine	1.0	120-36-5	2,4-DP	0.1
2300-66-5	Dimethylamine dicamba	1.0	1320-18-9	2,4-D propylene glycol butyl ether ester	0.1
60-11-7	4-Dimethylaminoazobenzene	0.1	2702-72-9	2,4-D sodium salt	0.1
121-69-7	N,N-Dimethylaniline	1.0	106-89-8	Epichlorohydrin	0.1
119-93-7	3,3'-Dimethylbenzidine (o-Tolidine)	0.1	13194-48-4	Ethoprop (Phosphorodithioic acid O-ethyl S,S-dipropyl ester)	1.0
612-82-8	3,3'-Dimethylbenzidine dihydrochloride (o-Tolidine dihydrochloride)	0.1	110-80-5	2-Ethoxyethanol	1.0
41766-75-0	3,3'-Dimethylbenzidine dihydrofluoride (o-Tolidine dihydrofluoride)	0.1	140-88-5	Ethyl acrylate	0.1
			100-41-4	Ethylbenzene	1.0
79-44-7	Dimethylcarbamylyl chloride	0.1	541-41-3	Ethyl chloroformate	1.0
2524-03-0	Dimethyl chlorothiophosphate	1.0	759-94-4	Ethyl dipropylthiocarbamate (EPTC)	1.0
68-12-2	N,N-Dimethylformamide	1.0	74-85-1	Ethylene	1.0
57-14-7	1,1-Dimethylhydrazine	0.1	107-21-1	Ethylene glycol	1.0
105-67-9	2,4-Dimethylphenol	1.0	151-56-4	Ethyleneimine (Aziridine)	0.1
576-26-1	2,6-Dimethylphenol	1.0	75-21-8	Ethylene oxide	0.1
131-11-3	Dimethyl phthalate	1.0	96-45-7	Ethylene thiourea	0.1
77-78-1	Dimethyl sulfate	0.1	75-34-3	Ethylidene dichloride	1.0
99-65-0	m-Dinitrobenzene	1.0	52-85-7	Famphur	1.0
528-29-0	o-Dinitrobenzene	1.0	60168-88-9	Fenarimol	1.0
100-25-4	p-Dinitrobenzene	1.0		(.alpha.-(2-Chlorophenyl)-alpha.-(4-chlorophenyl)-5-pyrimidine-methanol)	
88-85-7	Dinitrobutyl phenol (Dinoseb)	1.0	13356-08-6	Fenbutatin oxide	1.0
534-52-1	4,6-Dinitro-o-cresol	1.0		(Hexakis(2-methyl-2-phenylpropyl)distannoxane)	
51-28-5	2,4-Dinitrophenol	1.0	66441-23-4	Fenoxaprop ethyl	1.0
121-14-2	2,4-Dinitrotoluene	1.0		(2-(4-((6-Chloro-2-benzoxazolyl)-oxy)phenoxy)propanoic acid, ethyl ester)	1.0
606-20-2	2,6-Dinitrotoluene	1.0	72490-01-8	Fenoxycarab	1.0
25321-14-6	Dinitrotoluene (mixed isomers)	1.0		(2-(4-Phenoxyphenoxy)-ethylcarbamic acid ethyl ester)	
39300-45-3	Dinocap	1.0	39515-41-8	Fenpropathrin	1.0
123-91-1	1,4-Dioxane	0.1		(2,2,3,3-Tetramethylcyclopropane carboxylic acid cyano(3-phenoxyphenyl)methyl ester)	
957-51-7	Diphenamid	1.0	55-38-9	Fenthion	1.0
122-39-4	Diphenylamine	1.0		(O,O-Dimethyl O-[3-methyl-4-(methylthio)phenyl] ester, phosphorothioic acid)	
122-66-7	1-2-Diphenylhydrazine (Hydrazobenzene)	0.1	51630-58-1	Fenvalerate	1.0
2164-07-0	Dipotassium endothall (7-Oxaabicyclo(2.2.1)heptane-2,3-dicarboxylic acid, dipotassium salt)	1.0		(4-Chloro-alpha-(1-methylethyl)benzeneacetic acid cyano	
136-45-8	Dipropyl isocinchomeronate	1.0			
138-93-2	Disodium cyanodithioimidocarbonate	1.0			

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14484-64-1	Ferbam	1.0	7647-01-0	(3-phenoxyphenyl)methyl ester)	
	(Tris(dimethylcarbamo-dithioato-S,S')iron)		74-90-8	Hydrochloric acid (aerosol form only)	1.0
69806-50-4	Fluazifop butyl	1.0	7664-39-3	Hydrogen cyanide	1.0
	(2-[4-[[5-(Trifluoromethyl)-2-pyridinyl]oxy]phenoxy]propanoic acid, butyl ester)		123-31-9	Hydroquinone	1.0
2164-17-2	Fluometuron	1.0	35554-44-0	Imazalil	1.0
	[Urea, N,N-dimethyl-N'-[3-(trifluoromethyl)phenyl]-]		55406-53-6	(1-[2-(2,4-Dichlorophenyl)-2-(2-propenyloxy)ethyl]-1H-imidazole)	
7782-41-4	Fluorine	1.0	13463-40-6	3-Iodo-2-propynyl butylcarbamate	1.0
51-21-8	Fluorouracil (5-Fluorouracil)	1.0	78-84-2	Iron pentacarbonyl	1.0
69409-94-5	Fluvalinate	1.0	465-73-6	Isobutyraldehyde	1.0
	(N-[2-Chloro-4-(trifluoromethyl)phenyl]-DL-valine (+)-cyano(3-phenoxyphenyl)-methyl ester)		25311-71-1	Isodrin	1.0
133-07-3	Folpet	1.0		Isofenphos	1.0
72178-02-0	Fomesafen	1.0	67-63-0	(2-[[Ethoxy](1-methylethyl)amino]-phosphinothioyl)oxy]-benzoic acid 1-methylethyl ester)	
	(5-(2-Chloro-4-(trifluoromethyl)phenoxy)-N-methylsulfonyl-2-nitrobenzamide)		80-05-7	Isopropyl alcohol	1.0
50-00-0	Formaldehyde	0.1	120-58-1	(manufacturing-strong acid process, no supplier notification)	
64-18-6	Formic acid	1.0	77501-63-4	4,4'-Isopropylidenediphenol	1.0
76-13-1	Freon 113	1.0		Isosafrole	1.0
	[Ethane, 1,1,2-trichloro-1,2,2,-trifluoro-]			Lactofen	1.0
76-44-8	Heptachlor	1.0	7439-92-1	(Benzoic acid, (5-2-Chloro-4-(trifluoromethyl)phenoxy)-2-nitro-2-ethoxy-1-methyl-2-oxoethyl ester)	
	[1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene]		58-89-9	Lead	0.1
118-74-1	Hexachlorobenzene	0.1	330-55-2	Lindane	0.1
87-68-3	Hexachloro-1,3-butadiene	1.0	554-13-2	[Cyclohexane, 1,2,3,4,5,6-hexachloro-(1.alpha.,2.alpha.,3.beta, 4.alpha., 5.alpha.,6.beta.)-]	
319-84-6	alpha-Hexachlorocyclohexane	1.0	121-75-5	Linuron	1.0
77-47-4	Hexachlorocyclopentadiene	1.0	108-31-6	Lithium carbonate	1.0
67-72-1	Hexachloroethane	1.0	109-77-3	Malathion	1.0
1335-87-1	Hexachloronaphthalene	1.0	12427-38-2	Maleic anhydride	1.0
70-30-4	Hexachlorophene	1.0		Malononitrile	1.0
680-31-9	Hexamethylphosphoramide	0.1	7439-96-5	Maneb	1.0
110-54-3	n-Nexane	1.0	93-65-2	[Carbamodithioic acid, 1,2-ethanediylbis-,manganese complex]	
51235-04-2	Hexazinone	1.0	149-30-4	Manganese	1.0
67485-29-4	Hydramethylnon	1.0	7439-97-6	Mecoprop	0.1
	(Tetrahydro-5,5-dimethyl-2(1H)-pyrimidinone[3-]4-(trifluoromethyl)phenyl]-1-[2-[4-(trifluoromethyl)phenyl]ethenyl]-propenyldiene] hydrazone)		150-50-5	2-Mercaptobenzothiazole (MBT)	1.0
302-01-2	Hydrazine	0.1	126-98-7	Mercury	1.0
10034-93-2	Hydrazine sulfate	0.1	137-42-8	Merphos	1.0
			67-56-1	Methacrylonitrile	1.0
2032-65-7	Methiocarab	1.0	20354-26-1	Metham sodium (Sodium methylthiocarbamate)	1.0
				Methanol	1.0
				Methazole	1.0
				(2-(3,4-Dichlorophenyl)-4-methyl-1,2,4-oxadiazolidine-3,5-dione)	
			142-59-6	Nabam	1.0

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94-74-6	Methoxone	0.1	300-76-5	Naled	1.0
	((4-Chloro-2-methylphenoxy)		91-20-3	Naphthalene	1.0
	acetic acid) (MCPA)		134-32-7	alpha-Naphthylamine	0.1
3653-48-3	Methoxone sodium salt	1.0	91-59-8	beta-Naphthylamine	0.1
	((4-Chloro-2-methylphenoxy)		7440-02-0	Nickel	0.1
	acetate sodium salt)		1929-82-4	Nitrapyrin	1.0
72-43-5	Methoxychlor	1.0		(2-Chloro-6-(trichloromethyl)-pyridine)	
	[Benzene, 1,1'-(2,2,2-trichloro-ethylidene)bis[4-methoxy-]]		7697-37-2	Nitric acid	1.0
109-86-4	2-Methoxyethanol	1.0	139-13-9	Nitrilotriacetic acid	0.1
96-33-3	Methyl acrylate	1.0	100-01-6	p-Nitroaniline	1.0
1634-04-4	Methyl tert-butyl ether	1.0	99-59-2	5-Nitro-o-anisidine	1.0
79-22-1	Methyl chlorocarbonate	1.0	98-95-3	Nitrobenzene	1.0
101-14-4	4,4'-Methylenebis(2-chloroaniline) (MBOCA)	0.1	92-93-3	4-Nitrobiphenyl	0.1
			1836-75-5	Nitrofen	0.1
101-61-1	4,4'-Methylenebis(N,N-dimethyl)benzenamine	0.1		[Benzene, 2,4-dichloro-1-(4-nitrophenoxy)]	
74-95-3	Methylene bromide	1.0	51-75-2	Nitrogen mustard	0.1
101-77-9	4,4'-Methylenedianiline	0.1		[2-Chloro-N-(2-chloroethyl)-N-methylethanamine]	
78-93-3	Methyl ethyl ketone	1.0			
60-34-4	Methyl hydrazine	1.0	55-63-0	Nitroglycerin	1.0
74-88-4	Methyl iodide	1.0	88-75-5	2-Nitrophenol	1.0
108-10-1	Methyl isobutyl ketone	1.0	100-02-7	4-Nitrophenol	1.0
624-83-9	Methyl isocyanate	1.0	79-46-9	2-Nitropropane	0.1
556-61-6	Methyl isothiocyanate	1.0	924-16-3	N-Nitrosodi-n-butylamine	0.1
	(Isothiocyanatomethane)		55-18-5	N-Nitrosodiethylamine	0.1
75-86-5	2-Methylactonitrile	1.0	62-75-9	N-Nitrosodimethylamine	0.1
80-62-6	Methyl methacrylate	1.0	86-30-6	N-Nitrosodiphenylamine	1.0
924-42-5	N-Methylolacrylamide	1.0	156-10-5	p-Nitrosodiphenylamine	1.0
298-00-0	Methyl parathion	1.0	621-64-7	N-Nitrosodi-n-propylamine	0.1
109-06-8	2-Methylpyridine	1.0	759-73-9	N-Nitroso-N-ethylurea	0.1
872-50-4	N-Methyl-2-pyrrolidone	1.0	684-93-5	N-Nitroso-N-methylurea	0.1
9006-42-2	Metiram	1.0	4549-40-0	N-Nitrosomethylvinylamine	0.1
21087-64-9	Metribuzin	1.0	59-89-2	N-Nitrosomorpholine	0.1
7786-34-7	Mevinphos	1.0	16543-55-8	N-Nitrosomorpholine	0.1
90-94-8	Michler's ketone	0.1	100-75-4	N-Nitrosopiperidine	0.1
2212-67-1	Molinate	1.0	99-55-8	5-Nitro-o-toluidine	1.0
	(1H-Azepine-1-carbothioic acid, hexahydro-S-ethyl ester)		27314-13-2	Norflurazon	1.0
1313-27-5	Molybdenum trioxide	1.0		(4-Chloro-5-(methylamino)-2-[3-(trifluoromethyl)phenyl]-3(2H)-pyridazinone)	
76-15-3	Monochloropentafluoroethane (CFC-115)	1.0	2234-13-1	Octachloronaphthalene	1.0
150-68-5	Monuron	1.0	19044-88-3	Oryzalin	1.0
505-60-2	Mustard gas	0.1		(4-(Dipropylamino)-3,5-dinitrobenzene sulfonamide)	
	[Ethane, 1,1'-thiobis[2-chloro-]]				
88671-89-0	Myclobutanil	1.0	20816-12-0	Osmium tetroxide	1.0
	(.alpha.-Butyl-.alpha.-(4-chlorophenyl)-1H-1,2,4-triazole-1-propanenitrile)		301-12-2	Oxydemeton methyl	1.0
				(S-(2-(Ethylsulfinyl)ethyl)O,O-dimethyl ester phosphorothioic acid)	
19666-30-9	Oxydiazon	1.0	51-03-6	Piperonyl butoxide	1.0
	(3-[2,4-Dichloro-5-(1-methylethoxy)phenyl]-5-(1,1-dimethylethyl)-1,3,4-oxadiazol-2(3H)-one)		29232-93-7	Pirimiphos methyl	1.0
42874-03-3	Oxyfluorfen	1.0		(O-(2-(Diethylamino)-6-methyl-4-pyrimidinyl)-O,O-dimethylphosphorothioate)	

Number	Chemical Name	De Minimis Concentration	CAS Number	Chemical Name	De Minimis Concentration
10028-15-6	Ozone	1.0	1336-36-3	Polychlorinated biphenyls (PCBs)	0.1
123-63-7	Paraldehyde	1.0		Potassium bromate	0.1
1910-42-5	Paraquat dichloride	1.0	7758-01-2	Potassium	1.0
56-38-2	Parathion	1.0	128-03-0	dimethyldithiocarbamate	
	[Phosphorothioic acid, O,O-diethyl-O-(4-nitrophenyl)ester]		137-41-7	Potassium N-methyldithiocarbamate	1.0
1114-71-2	Pebulate	1.0	41198-08-7	Profenofos	1.0
	(Butylethylcarbamothioic acid S-propyl ester)			(O-(4-Bromo-2-chlorophenyl)-O-ethyl-S-propyl phosphorothioate)	
40487-42-1	Pendimethalin	1.0	7287-19-6	Prometryn	1.0
	(N-(1-Ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine)			(N,N'-Bis(1-methylethyl)-6-methylthio-1,3,5-triazine-2,4-diamine)	
76-01-7	Pentachloroethane	1.0		Pronamide	1.0
87-86-5	Pentachlorophenol (PCP)	1.0	23950-58-5	Propachlor	1.0
57-33-0	Pentobarbital sodium	1.0	1918-16-7	(2-Chloro-N-(1-methylethyl)-N-phenylacetamide)	
79-21-0	Peracetic acid	1.0		Propane sultone	0.1
594-42-3	Perchloromethyl mercaptan	1.0	1120-71-4	Propanil	1.0
52645-53-1	Permethrin	1.0	709-98-8	(N-(3,4-Dichlorophenyl)-propanamide)	
	(3-(2,2-Dichloroethenyl)-2,2-dimethylcyclopropanecarboxylic acid,(3-phenoxyphenyl) methyl ester)			Propargite	1.0
85-01-8	Phenanthrene	1.0	2312-35-8	Propargyl alcohol	1.0
108-95-2	Phenol	1.0	107-19-7	Propetamphos	1.0
26002-80-2	Phenothrin	1.0	31218-83-4	(3-[Ethylamino)methoxyphosphinothioyl]oxy]- 2-butenic acid, 1-methylethyl ester)	
	(2,2-Dimethyl-3-(2-methyl-1-propenyl)cyclopropanecarboxylic acid (3-phenoxyphenyl)methyl ester)			Propiconazole	1.0
95-54-5	1,2-Phenylenediamine	1.0	60207-90-1	(1-[2-(2,4-Dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl]-methyl-1H-1,2,4,-triazole)	
108-45-2	1,3-Phenylenediamine	1.0		betra-Propiolactone	0.1
106-50-3	p-Phenylenediamine	1.0	57-57-8	Propionaldehyde	1.0
615-28-1	1,2-Phenylenediamine dihydrochloride	1.0	123-38-6	Propoxur	1.0
624-18-0	1,4-Phenylenediamine dihydrochloride	1.0	114-26-1	[Phenol,2-(1-methylethoxy)-methylcarbamate]	
90-43-7	2-Phenylphenol	1.0		Propylene (Propene)	1.0
57-41-0	Phenytoin	0.1	115-07-1	Propyleneimine	0.1
75-44-5	Phosgene	1.0	75-55-8	Propylene oxide	0.1
7803-51-2	Phosphine	1.0	75-56-9	Pyridine	1.0
7664-38-2	Phosphoric acid	1.0	110-86-1	Quinoline	1.0
7723-14-0	Phosphorus (yellow or white)	1.0	91-22-5	Quinone	1.0
85-44-9	Phthalic anhydride	1.0	106-51-4	Quintozene	1.0
1918-02-1	Picloram	1.0	82-68-8	(Pentachloronitrobenzene)	
88-89-1	Picric acid	1.0		Tetrachloroethylene	0.1
				(Perchloroethylene)	
76578-14-8	Quizalofop-ethyl	1.0	127-18-4	1,1,1,2-Tetrachloro-2-fluoroethane (HCFC-121a)	1.0
	[2-[4-[(6-Chloro-2-quinoxalinyloxy]phenoxy]propanoic acid ethyl ester]		354-11-0	1,1,2,2-Tetrachloro-1-fluoroethane (HCFC-121)	1.0
10453-86-8	Resmethrin	1.0	354-14-3	Tetrachlorvinphos	1.0
	([5-(Phenylmethyl)-3-furanyl]-methyl-2,2-dimethyl-3-(2-methyl-1-oropenyl) cyclopropane carboxylate])		961-11-5	[Phosphoric acid, 2-chloro-1-(2,4,5-trichlorophenyl)ethenyl dimethyl ester]	
81-07-2	Saccharin (manufacturing, no	0.1			

Number	Chemical Name	De Minimis Concentration	CAS Number	Chemical Name	De Minimis Concentration
94-59-7	supplier notification)		64-75-5	Tetracycline hydrochloride	1.0
7782-49-2	Safrole	0.1	7696-12-0	Tetramethrin	1.0
74051-80-2	Selenium	1.0		(2,2-Dimethyl-3-(2-methyl-1-propenyl)cyclopropanecarboxylic acid (1,3,4,5,6,7-hexahydro-1,3-dioxo-2H-isoindol-2-yl)methyl ester)	
	Sethoxydim	1.0			
	(2-[1-(Ethoxyimino)butyl]-5-]-2-(ethylthio)propyl]-3-hydroxyl-2-cyclohexen-1-one)		7440-28-0	Thallium	1.0
7440-22-4	Silver	1.0	148-79-8	Thiabendazole	1.0
122-34-9	Simazine	1.0		(2-(4-Thiazolyl)-1H-benzimidazole)	
26628-22-8	Sodium azide	1.0	62-55-5	Thioacetamide	0.1
1982-69-0	Sodium dicamba	1.0	28249-77-6	Thiobencarb	1.0
	(3,6-Dichloro-2-methoxybenzoic acid, sodium salt)			(Carbamic acid, diethylthio-,S-(p-chlorobenzyl)ester)	
128-04-1	Sodium dimethyldithiocarbamate	1.0	139-65-1	4,4'-Thiodianiline	0.1
62-74-8	Sodium fluoroacetate	1.0	59669-26-0	Thiodicarb	1.0
7632-00-0	Sodium nitrite	1.0	2365-06-9	Thiophanate ethyl	1.0
131-52-2	Sodium pentachlorophenate	1.0		([1,2-Phenylenebis-(iminocarbonothioyl)]biscarbamic acid diethylester)	
132-27-4	Sodium o-phenylphenoxide	0.1	23564-05-8	Thiophanate-methyl	1.0
100-42-5	Styrene	0.1	79-19-6	Thiosemicarbazide	1.0
96-09-3	Styrene oxide	0.1	62-56-6	Thiourea	0.1
7664-93-9	Sulfuric acid	1.0	137-26-8	Thiram	1.0
	(acid aerosols including mists, vapors, gas, fog, and other airborne species of any particle size)		1314-20-1	Thorium dioxide	1.0
2699-79-8	Sulfuryl fluoride (Vikane)	1.0	7550-45-0	Titanium tetrachloride	1.0
35400-43-2	Sulprofos	1.0	108-88-3	Toluene	1.0
	(O-Ethyl O-[4-(methylthio)phenyl]phosphorodithioic acid S-propylester)		584-84-9	Toluene-2,4-diisocyanate	0.1
34014-18-1	Tebuthiuron	1.0	91-08-7	Toluene-2,6-diisocyanate	0.1
	(N-[5-(1,1-Dimethylethyl)-1,3,4-thiadiazol-2-yl]-N,N'-dimethylurea)		26471-62-5	Toluene diisocyanate (mixed isomers)	0.1
3383-96-8	Temephos	1.0	95-53-4	o-Toluidine	0.1
5902-51-2	Terbacil	1.0	636-21-5	o-Toluidine hydrochloride	0.1
	(5-Chloro-3-(1,1-dimethylethyl)-6-methyl-2,4(1H,3H)-pyrimidinedione		8001-35-2	Toxaphene	0.1
630-20-6	1,1,1,2-Tetrachloroethane	1.0	43121-43-3	Triadimefon	1.0
79-34-5	1,1,2,2-Tetrachloroethane	1.0		(1-(4-Chlorophenoxy)-3,3-dimethyl-1-(1H-1,2,4-triazol-1-yl)-2-butanone)	
68-76-8	Triaziquone	1.0	2303-17-5	Triallate	1.0
	[2,5-Cyclohexadiene-1,4-dione, 2,3,5-tris(1-aziridinyl)-]		108-05-4	Vinyl acetate	1.0
101200-48-0	Tribenuron methyl	1.0	593-60-2	Vinyl bromide	0.1
	(2-(((4-Methoxy-6-methyl-1,3,5-triazin-2-yl)-methylamino)-carbonyl)amono)sulfonyl)-,methyl ester)		75-01-4	Vinyl chloride	0.1
1983-10-4	Tributyltin fluoride	1.0	75-35-4	Vinylidene chloride	1.0
2155-70-6	Tributyltin methacrylate	1.0	108-38-3	m-Xylene	1.0
78-48-8	S,S,S-Tributyltrithio-phosphate (DEF)	1.0	95-47-6	o-Xylene	1.0
			106-42-3	p-Xylene	1.0
52-68-6	Trichlorfon	1.0	1330-20-7	Xylene (mixed isomers)	1.0
	[Phosphonic acid,(2,2,2-trichloro-		87-62-7	2,6-Xylidine	1.0
			7440-66-6	Zinc (fume or dust)	1.0
			12122-67-7	Zineb	1.0
				[Carbamodithioic acid, 1,2-ethanediyldis-, zinc complex]	

Number	Chemical Name	De Minimis Concentration	CAS CAS Number	Chemical Name	De Minimis Concentration
	1-hydroxyethyl) dimethyl ester]				
76-02-8	Trichloroacetyl chloride	1.0			
120-82-1	1,2,4-Trichlorobenzene	1.0			
71-55-6	1,1,1-Trichloroethane (Methyl chloroform)	1.0			
79-00-5	1,1,2-Trichloroethane	1.0			
79-01-6	Trichloroethylene	1.0			
75-69-4	Trichlorofluoromethane (CFC-11)	1.0			
95-95-4	2,4,5-Trichlorophenol	1.0			
88-06-2	2,4,6-Trichlorophenol	0.1			
96-18-4	1,2,3-Trichloropropane	1.0			
57213-69-1	Triclopyr triethylammonium salt	1.0			
121-44-8	Triethylamine	1.0			
1582-09-8	Trifluralin	1.0			
	[Benzeneamine, 2,6-dinitro-N,N-dipropyl-4-(trifluoromethyl)-]				
2664-46-2	Triforine	1.0			
	(N,N'-[1,4-Piperazinediylbis-(2,2,2-trichloroethylidene)]bisformamide)				
95-63-6	1,2,4-Trimethylbenzene	1.0			
2655-15-4	2,3,5-Trimethylphenyl methylcarbamate	1.0			
639-58-7	Triphenyltin chloride	1.0			
76-87-9	Triphenyltin hydroxide	1.0			
126-72-7	Tris(2,3-dibromopropyl) phosphate	0.1			
72-57-1	Trypan blue	0.1			
51-79-6	Urethane (Ethyl carbamate)	0.1			
7440-62-2	Vanadium (fume or dust)	1.0			
50471-44-8	Vinclozolin	1.0			
	(3-(3,5-Dichlorophenyl)-5-ethenyl-5-methyl-2,4-oxazolidineadione)				



## b. CAS Numbered List of TRI Chemicals

CAS Number	Chemical Name	De Minimis Concentration	CAS Number	Chemical Name	De Minimis Concentration
50-00-0	Formaldehyde	0.1	62-73-7	Dichlorvos	1.0
51-03-6	Piperonyl butoxide	1.0		[Phosphoric acid,2-dichloro-ethenyl dimethyl ester]	
51-21-8	Fluorouracil (5-Fluorouracil)	1.0	62-74-8	Sodium fluoroacetate	1.0
51-28-5	2,4-Dinitrophenol	1.0	62-75-9	N-Nitrosodimethylamine	0.1
51-75-2	Nitrogen mustard	0.1	63-25-2	Carbaryl [1-Naphthalenol, methylcarbamate]	1.0
	[2-Chloro-N-(2-chloroethyl)-N-methylethanamine]				
51-79-6	Urethane (Ethyl carbamate)	0.1	64-18-6	Formic acid	1.0
52-51-7	2-Bromo-2-nitropropane-1,3-diol (Bronopol)	1.0	64-67-5	Diethyl sulfate	0.1
			64-75-5	Tetracycline hydrochloride	1.0
52-68-6	Trichlorfon	1.0	67-56-1	Methanol	1.0
	[Phosphonic acid, (2,2,2-trichloro-1-hydroxyethyl)dimethyl ester]		67-63-0	Isopropyl alcohol	1.0
52-85-7	Famphur	1.0		(manufacturing-strong acid process, no supplier notification)	
53-96-3	2-Acetylaminofluorene	0.1	67-66-3	Chloroform	0.1
55-18-5	N-Nitrosodiethylamine	0.1	67-72-1	Hexachloroethane	1.0
55-21-0	Benzamide	1.0	68-12-2	N,N-Dimethylformamide	1.0
55-38-9	Fenthion	1.0	68-76-8	Triaziquone	1.0
	(O,O-Dimethyl O-[3-methyl-4-(methylthio)phenyl]ester, phosphorothioic acid)			[2,5-Cyclohexadiene-1,4,-dione,2,3,5-tris(1-aziridinyl)-]	
55-63-0	Nitroglycerin	1.0	71-36-3	Hexachlorophene	1.0
56-23-5	Carbon tetrachloride	0.1	71-43-2	n-Butyl alcohol	1.0
56-35-9	Bis(9tributyltin) oxide	1.0	71-55-6	Benzene	0.1
56-38-2	Parathion	1.0		1,1,1-Trichloroethane (Methyl chloroform)	1.0
	[Phosphorothioic acid, O,O-diethyl-O-(4-nitrophenyl) ester]		72-43-5	Methoxychlor	1.0
57-14-7	1,1-Dimethylhydrazine	0.1		[Benzene, 1,1'-(2,2,2-trichloro-ethylidene)bis[4-methoxy-]]	
57-33-0	Pentobarbital sodium	1.0	72-57-1	Trypan blue	0.1
57-41-0	Phenytoin	0.1	74-83-9	Bromomethane (Methyl bromide)	1.0
57-57-8	beta-Propiolactone	0.1	74-85-1	Ethylene	1.0
57-74-9	Chlordane	1.0	74-87-3	Chloromethane (Methyl chloride)	1.0
	[4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-]		74-88-4	Methyl iodide	1.0
			74-90-8	Hydrogen cyanide	1.0
			74-95-3	Methylene bromide	1.0
58-89-9	Lindane	0.1	75-00-3	Chloroethane (Ethyl chloride)	1.0
	[Cyclohexane, 1,2,3,4,5,6-hexachloro-,(1.alpha.,2.alpha.,3.beta.,4.alpha.,5.alpha.,6.beta.)-]		75-01-4	Vinyl chloride	0.1
			75-05-8	Acetonitrile	1.0
			75-07-0	Acetaldehyde	0.1
59-89-2	N-Nitrosomorpholine	0.1	75-09-2	Dichloromethane (Methylene chloride)	0.1
60-09-3	4-Aminoazobenzene	0.1			
60-11-7	4-Dimethylaminoazobenzene	0.1	75-15-0	Carbon disulfide	1.0
60-34-4	Methyl hydrazine	1.0	75-21-8	Ethylene oxide	0.1
60-35-5	Acetamide	0.1	75-25-2	Bromoform (Tribromomethane)	1.0
60-51-5	Dimethoate	1.0	75-27-4	Dichlorobromomethane	1.0
61-82-5	Amitrole	0.1	75-34-3	Ethylidene dichloride	1.0
62-53-3	Aniline	1.0	75-35-4	Vinylidene chloride	1.0
62-55-5	Thioacetamide	0.1	75-43-4	Dichlorofluoromethane(HCFC21)	1.0
62-56-6	Thiourea	0.1	75-44-5	Phosgene	1.0
75-45-6	Chlorodifluoromethane(HCFC-22)	1.0	79-34-5	1,1,2,2-Tetrachloroethane	1.0
75-55-8	Propyleneimine	0.1	79-44-7	Dimethylcarbaryl chloride	0.1
75-56-9	Propylene oxide	0.1	79-46-9	2-Nitropropane	0.1

CAS Number	Chemical Name	De Minimis Concentration	CAS Number	Chemical Name	De Minimis Concentration
75-63-8	Bromotrifluoromethane (Halon 1301)	1.0	80-05-7	4,4'-Isopropylidenediphenol	1.0
75-65-0	tert-Butyl alcohol	1.0	80-15-9	Cumene hydroperoxide	1.0
75-68-3	1-Chloro-1,1-difluoroethane (HCFC-142b)	1.0	80-62-6	Methyl methacrylate	1.0
75-69-4	Trichlorofluoromethane (CFC-11)	1.0	81-07-2	Saccharin (manufacturing, no supplier notification)	0.1
75-71-8	Dichlorodifluoromethane (CFC-12)	1.0	81-88-9	C.I. Food Red 15	
75-72-9	Chlorotrifluoromethane (CFC-13)	1.0	82-28-0	1-Amino-2-methylantraquinone	0.1
75-86-5	2-Methylacetonitrile	1.0	82-68-8	Quintozene (Pentachloronitrobenzene)	1.0
75-88-7	2-Chloro-1,1,1-trifluoroethane (HCFC-133a)	1.0	84-74-2	Dibutyl phthalate	1.0
76-01-7	Pentachloroethane	1.0	85-01-8	Phenanthrene	1.0
76-02-08	Trichloroacetyl chloride	1.0	85-44-9	Phthalic anhydride	1.0
76-06-2	Chloropicrin	1.0	86-30-6	N-Nitrosodiphenylamine	1.0
76-13-1	Freon 113	1.0	87-62-7	2,6-Xylydine	1.0
	[Ethane, 1,1,2-trichloro-1,2,2,-trifluoro-]		87-68-3	Hexachloro-1,3,-butadiene	1.0
76-14-2	Dichlorotetrafluoroethane (CFC-114)	1.0	87-76-5	Pentachlorophenol (PCP)	1.0
76-15-3	Monochloropentafluoroethane (CFC-115)	1.0	88-06-2	2,4,6-Trichlorophenol	0.1
76-44-8	Heptachlor	1.0	88-75-5	2-Nitrophenol	1.0
	[1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene]		88-85-7	Dinitrobutyl phenol (Dioseb)	1.0
76-87-9	Triphenyltin hydroxide	1.0	88-89-1	Picric acid	1.0
77-47-4	Hexachlorocyclopentadiene	1.0	90-04-0	o-Anisidine	0.1
77-73-6	Dicyclopentadiene	1.0	90-43-7	2-Phenylphenol	1.0
77-78-1	Dimethyl sulfate	0.1	90-94-8	Michler's ketone	0.1
78-48-8	S,S,S-Tributyltrithiophosphate (DEF)	1.0	91-08-7	Toluene-2,6-diisocyanate	0.1
78-84-2	Isobutyraldehyde	1.0	91-20-3	Naphthalene	1.0
78-87-5	1,2,-Dichloropropane	1.0	91-22-5	Quinoline	1.0
78-88-6	2,3-Dichloropropene	1.0	91-59-8	beta-Naphthylamine	0.1
78-92-2	sec-Butyl alcohol	1.0	91-94-1	3,3'-Dichlorobenzidine	0.1
78-93-3	Methyl ethyl ketone	1.0	92-52-4	Biphenyl	0.1
79-00-5	1,1,2-Trichloroethane	1.0	92-67-1	4-Aminobiphenyl	0.1
79-01-6	Trichloroethylene	1.0	92-87-5	Benzidine	0.1
79-06-1	Acrylamide	0.1	92-93-3	4-Nitrobiphenyl	0.1
79-10-7	Acrylic acid	1.0	93-65-2	Mecoprop	0.1
79-11-8	Chloroacetic acid	1.0	94-11-1	2,4-D isopropyl ester	0.1
79-19-6	Thiosemicarbazide	1.0	94-36-0	Benzoyl peroxide	1.0
79-21-0	Peracetic acid	1.0	94-58-6	Dihydrosafrole	0.1
79-22-1	Methyl chlorocarbonate	1.0	94-59-7	Safrole	0.1
94-82-6	2,4-DB	1.0	94-74-6	Methoxone ((4-Chloro-2-methylphenoxy) acetic acid) (MCPA)	0.1
95-47-6	o-Xylene	1.0	94-75-7	2,4-D [Acetic acid, (2,4-dichlorophenoxy)-]	1.0
95-48-7	o-Cresol	1.0	94-80-4	2,4-D butyl ester	0.1
95-50-1	1,2-Dichlorobenzene	1.0	104-94-9	p-Anisidine	1.0
95-53-4	o-Toluidine	0.1	105-67-9	2,4-Dimethylphenol	1.0
95-54-5	1,2-Phenylenediamine	1.0	106-42-3	p-Xylene	1.0
95-63-6	1,2,4-Trimethylbenzene	1.0	106-44-5	p-Cresol	1.0
95-69-2	p-Chloro-o-toluidine	0.1	106-46-7	1,4-Dichlorobenzene	0.1
95-80-7	2,4-Diaminotoluene	0.1	106-47-8	p-Chloroaniline	1.0
95-95-4	2,4,5-Trichlorophenol	1.0	106-50-3	p-Phenylenediamine	1.0
96-09-3	Styrene oxide	0.1	106-51-4	Quinone	1.0
			106-88-7	1,2-Butylene oxide	1.0
			106-89-8	Epichlorohydrin	0.1
			106-93-4	1,2-Dibromoethane	0.1

CAS Number	Chemical Name	De Minimis Concentration	CAS Number	Chemical Name	De Minimis Concentration
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	0.1	106-99-0	(Ethylene dibromide)	
96-18-4	1,2,3-Trichloropropane	1.0	107-02-8	1,3-Butadiene	0.1
96-33-3	Methyl acrylate	1.0	107-05-1	Acrolein	1.0
96-45-7	Ethylene thiourea	0.1	107-06-2	Allyl chloride	1.0
97-23-4	Dichlorophene (2,2'-Methylenebis(4-chlorophenol))	1.0		1,2-Dichloroethane (Ethylene dichloride)	0.1
97-56-3	C.I. Solvent Yellow 3	1.0	107-11-9	Allylamine	1.0
98-07-7	Benzoic trichloride (Benzotrichloride)	0.1	107-13-1	Acrylonitrile	0.1
98-82-8	Cumene	1.0	107-18-6	Allyl alcohol	1.0
98-86-2	Acetophenone	1.0	107-19-7	Propargyl alcohol	1.0
98-87-3	Benzal chloride	1.0	107-21-1	Ethylene glycol	1.0
98-88-4	Benzoyl chloride	1.0	107-30-2	Chloromethyl methyl ether	0.1
98-95-3	Nitrobenzene	1.0	108-05-4	Vinyl acetate	1.0
99-30-9	Dichloran (2,6-Dichloro-4-nitroaniline)	1.0	108-10-1	Methyl isobutyl ketone	1.0
99-55-8	5-Nitro-o-toluidine	1.0	108-31-6	Maleic anhydride	1.0
99-59-2	5-Nitro-o-anisidine	1.0	108-38-3	m-Xylene	1.0
99-65-0	m-Dinitrobenzene	1.0	108-39-4	m-Cresol	1.0
100-01-6	p-Nitroaniline	1.0	108-45-2	1,3-Phenylenediamine	1.0
100-02-7	4-Nitrophenol	1.0	108-60-1	Bis(2-chloro-1-methylethyl)ether	1.0
10025-4	p-Dinitrobenzene	1.0	108-88-3	Toluene	1.0
100-41-4	Ethylbenzene	1.0	108-90-7	Chlorobenzene	1.0
100-42-5	Styrene	0.1	108-93-0	Cyclohexanol	1.0
100-44-7	Benzyl chloride	1.0	108-95-2	Phenol	1.0
100-75-4	N-Nitrosopiperidine	0.1	109-06-8	2-Methylpyridine	1.0
101-05-3	Anilazine	1.0	109-77-3	Malononitrile	1.0
	[4,6-Dichloro-N-(2-chlorophenyl)-1,3,5-triazin-2-amine]		109-86-4	2-Methoxyethanol	1.0
101-14-4	4,4'-Methylenebis(2-chloroaniline) (MBOCA)	0.1	110-54-3	n-Hexane	1.0
101-61-1	4,4'-Methylenebis(N,N-dimethyl)benzenamine	0.1	110-57-6	trans-1,4-Dichloro-2-butene	1.0
101-77-9	4,4'-Methylenedianiline	0.1	110-80-5	2-Ethoxyethanol	1.0
101-80-4	4,4'-Diaminodiphenyl ether	0.1	110-82-7	Cyclohexane	1.0
101-90-6	Diglycidyl resorcinol ether	0.1	110-86-1	Pyridine	1.0
			111-42-2	Diethanolamine	1.0
104-12-1	p-Chlorophenyl isocyanate	1.0	111-44-4	Bis(2-chloroethyl)ether	1.0
115-32-2	Dicofol [Benzenemethanol, 4-chloro-.alpha.-4-(chlorophenyl)-.alpha.-(trichloromethyl)-]	1.0	111-91-1	Bis(2-chloroethoxy) methane	1.0
116-06-3	Aldicarb	1.0	114-26-1	Propoxur	1.0
117-79-3	2-Aminoanthraquinone	0.1		[Phenol,2-(1-methylethoxy)-, methylcarbamate]	
117-81-7	Di(2-ethylhexyl) phthalate (DEHP)	0.1	115-07-1	Propylene (Propene)	1.0
118-74-1	Hexachlorobenzene	0.1	115-28-6	Chlorendic acid	0.1
119-90-4	3,3'-Dimethoxybenzidine	0.1	134-29-2	o-Anisidine hydrochloride	0.1
119-93-7	3,3'-Dimethylbenzidine(o-Tolidine)	0.1	134-32-7	alpha-Naphthylamine	0.1
120-12-7	Anthracene	1.0	135-20-6	Cupferron [Benzeneamine, N-hydroxy-N-ammonium salt]	0.1
120-36-5	2,4-DP	0.1		Dipropyl isocinchomeronate	1.0
120-58-1	Isosafrole	1.0	136-45-8	Thiram	1.0
120-71-8	p-Cresidine	0.1	137-26-8	Potassium N-methyldithiocarbamate	1.0
120-80-9	Catechol	1.0	137-41-7	Metham sodium (Sodium methyldithiocarbamate)	1.0
120-82-1	1,2,4-Trichlorobenzene	1.0	137-42-8	Disodium cyanodithiomido-carbonate	1.0
			138-93-2	Nitrilotriacetic acid	0.1
			139-13-9	4,4'-Thiodianiline	0.1
			139-65-1	Ethyl acrylate	0.1
			140-88-5		

CAS Number	Chemical Name	De Minimis Concentration	CAS Number	Chemical Name	De Minimis Concentration
120-83-2	2,4-Dichlorophenol	1.0	141-32-2	Butyl acrylate	1.0
121-14-2	2,4-Dinitrotoluene	1.0	142-59-6	Nabam	1.0
121-44-8	Triethylamine	1.0	148-79-8	Thiabendazole	1.0
121-69-7	N,N-Dimethylaniline	1.0		(2-(4-Thiazolyl)-1H-benzimidazole)	
121-75-5	Malathion	1.0	149-30-4	2-Mercaptobenzothiazole	1.0
122-34-9	Simazine	1.0		(MBT)	
122-39-4	Diphenylamine	1.0	150-50-5	Merphos	1.0
122-66-7	1,2-Diphenylhydrazine	0.1	150-68-5	Monuron	1.0
	(Hydrazobenzene)		151-56-4	Ethyleneimine (Aziridine)	0.1
123-31-9	Hydroquinone	1.0	156-10-5	p-Nitrosodiphenylamine	1.0
123-38-6	Propionaldehyde	1.0	156-62-7	Calcium cyanamide	1.0
123-63-7	Paraldehyde	1.0	298-00-0	Methyl parathion	1.0
123-72-8	Butyraldehyde	1.0	300-76-5	Naled	1.0
123-91-1	1,4-Dioxane	0.1	301-12-2	Oxydemeton methyl	1.0
124-40-3	Dimethylamine	1.0		(S-(2-(Ethylsulfinyl)ethyl)O,O-dimethyl ester phosphorothioic acid)	
124-73-2	Dibromotetrafluoroethane	1.0			
	(Halon 2402)		302-01-2	Hydrazine	0.1
126-72-7	Tris(2,3-dibromopropyl)phosphate	0.1	306-83-2	2,2-Dichloro-1,1,1-trifluoroethane	1.0
126-98-7	Methacrylonitrile	1.0		(HCFC-123)	
126-99-8	Chloroprene	1.0	309-00-2	Aldrin	1.0
127-18-4	Tetrachloroethylene	0.1		[1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1.alpha.,4.alpha.4a.beta.,5.alpha.,8.alpha.,8a.beta.)-]	
128-03-0	Potassium dimethyldithiocarbamate	1.0			
128-04-1	Sodium dimethyldithiocarbamate	1.0	314-40-9	Bromacil	1.0
128-66-5	C.I. Vat elow 4	1.0		(5-Bromo-6-methyl-3-(1-methylpropyl)-2,4-(1H,3H)-pyrimidine-dione)	
131-11-3	Dimethyl phthalate	1.0			
131-52-2	Sodium pentachlorophenate	1.0	319-84-6	alpha-Hexachlorocyclohexane	1.0
132-27-4	Sodium o-phenylphenoxide	0.1	330-54-1	Diuron	1.0
132-64-9	Dibenzofuran	1.0	330-55-2	Linuron	1.0
133-06-2	Captan	1.0	333-41-5	Diazinon	1.0
	[1H-Isoindole-1,3(2H)-dione, 3a, 4,7,7a-tetrahydro-2-[(trichloromethyl)thio]-]		334-88-3	Diazomethane	1.0
133-07-3	Folpet	1.0	353-59-3	Bromochlorodifluoromethane	1.0
133-90-4	Chloramben	1.0		(Halon 1211)	
	[Benzoic acid,3-amino-2,5-dichloro-]				
354-11-0	1,1,1,2-Tetrachloro-2-fluoroethane	1.0	584-84-9	Toluene-2,4-diisocyanate	0.1
	(HCFC-121a)		593-60-2	Vinyl bromide	0.1
354-14-3	1,1,2,2-Tetrachloro-1-fluoroethane	1.0	594-42-3	Perchloromethyl mercaptan	1.0
	(HCFC-121)		606-20-2	2,6-Dinitrotoluene	1.0
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane	1.0	612-82-8	3,3'-Dimethylbenzidine	0.1
	(HCFC-123a)			dihydrochloride	
354-25-6	1-Chloro-1,1,2,2-tetrafluoroethane	1.0		(o-Tolidine dihydrochloride	
	(HCFC-124a)		612-83-9	3,3'-Dichlorobenzidine	0.1
357-57-3	Brucine	1.0		dihydrochloride	
422-44-6	1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225bb)	1.0	615-05-4	2,4-Diaminoanisole	0.1
			615-28-1	1,2-Phenylenediamine	1.0
422-48-0	2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC-225ba)	1.0		dihydrochloride	
			621-64-7	N-Nitrosodi-n-propylamine	0.1
422-56-0	3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)	1.0	624-18-0	1,4-Phenylenediamine	1.0
				dihydrochloride	
431-86-7	1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC-225da)	1.0	624-83-9	Methyl isocyanate	1.0
			630-20-6	1,1,1,2-Tetrachloroethane	1.0
460-35-5	3-Chloro-1,1,1-trifluoropropane	1.0	636-21-5	o-Toluidine hydrochloride	0.1
	(HCFC-253fb)		639-58-7	Triphenyltin chloride	1.0

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463-58-1	Carbonyl sulfide	1.0	680-31-9	Hexamethylphosphoramide	0.1
465-73-6	Isodrin	1.0	684-93-5	N-Nitroso-N-methylurea	0.1
492-80-8	C.I. Solvent Yellow 34 (Auramine)	0.1	709-98-8	Propanil (N-(3,4-Dichlorophenyl) propanamide)	1.0
505-60-2	Mustard gas	0.1			
	[Ethane, 1,1'-thiobis[2-chloro-]]		759-73-9	N-Nitroso-N-ethylurea	0.1
507-55-1	1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)	1.0	759-94-4	Ethyl dipropylthiocarbamate (EPTC)	1.0
510-15-6	Chlorobenzilate	1.0	764-41-0	1,4-Dichloro-2-butene	1.0
	[Benzeneacetic acid, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-hydroxy-,ethyl ester]		812-04-4	1,1-Dichloro-1,2,2-trifluoroethane (HCFC-123b)	1.0
528-29-0	o-Dinitrobenzene	1.0	834-12-8	Ametryn (N-Ethyl-N'-(1-methylethyl)-6-(methylthio)-1,3,5,-triazine-2,4-diamine)	1.0
532-27-4	2-Chloroacetophenone	1.0			
533-74-4	Dazomet	1.0			
	(Tetrahydro-3,5-dimethyl-2H-1,3,5-thiadiazine-2-thione)		842-07-9	C.I. Solvent Yellow 14	1.0
534-52-1	4,6-Dinitro-o-cresol	1.0	872-50-4	N-Methyl-2-pyrrolidone	1.0
540-59-0	1,2-Dichloroethylene	1.0	924-16-3	N-Nitrosodi-n-butylamine	0.1
541-41-3	Ethyl chloroformate	1.0	924-42-5	N-Methylolacrylamide	1.0
541-53-7	2,4-Dithiobiuret	1.0	957-51-7	Diphenamid	1.0
541-73-1	1,3-Dichlorobenzene	1.0	961-11-5	Tetrachlorvinphos	1.0
542-75-6	1,3-Dichloropropylene	0.1		[Phosphoric acid, 2-chloro-1-(2,4,5-trichlorophenyl)ethenyl dimethyl ester]	
542-76-7	3-Chloropropionitrile	1.0			
542-88-1	Bis(chloromethyl) ether	0.1	989-38-8	C.I. Basic Red 1	1.0
554-13-2	Lithium carbonate	1.0	1114-71-2	Pebulate	1.0
556-61-6	Methyl isothiocyanate (Isothiocyanatomethane)	1.0		(Butylethylcarbamothioic acid S-propyl ester)	
563-47-3	3-Chloro-2-methyl-1-propene	0.1	1120-71-4	Propane sultone	0.1
569-64-2	C.I. Basic Green 4	1.0	1134-23-2	Cycloate	1.0
576-26-1	2,6-Dimethylphenol	1.0	1163-19-5	Decabromodiphenyl oxide	1.0
			1313-27-5	Molybdenum trioxide	1.0
			1314-20-1	Thorium dioxide	1.0
1319-77-3	Cresol (mixed isomers)	1.0	1982-69-0	Sodium dicamba	1.0
1320-18-9	2,4-D propylene glycol butyl ether ester	0.1		(3,6-Dichloro-2-methoxybenzoic acid, sodium salt)	
1330-20-7	Xylene (mixed isomers)	1.0	1983-10-4	Tributyltin fluoride	1.0
1332-21-4	Asbestos (friable)	0.1	2032-65-7	Methiocarb	1.0
1335-87-1	Hexachloronaphthalene	1.0	2155-70-6	Tributyltin methacrylate	1.0
1336-36-3	Polychlorinated biphenyls (PCBs)	0.1	2164-07-0	Dipotassium endothall	1.0
1344-28-1	Aluminum oxide (fibrous forms)	1.0		(7-Oxabicyclo(2.2.1)heptane-2,3-dicarboxylic acid, dipotassium salt)	
1464-53-5	Diepoxybutane	0.1	2164-17-2	Fluometuron	1.0
1563-66-2	Carbofuran	1.0		[Urea, N,N-dimethyl-N'-[3(trifluoromethyl)phenyl]-]	
1582-09-8	Trifluralin	1.0			
	[Benzeneamine, 2,6-dinitro-N,N-dipropyl-4-(trifluoromethyl)-]		2212-67-1	Molinate	1.0
1634-04-4	Methyl tert-butyl ether	1.0		(1H-Azepine-1-carbothioic acid, hexahydro-S-ethyl ester)	
1649-08-7	1,2-Dichloro-1,1-difluoroethane (HCFC-132b)	1.0	2234-13-1	Octachloronaphthalene	1.0
1689-84-5	Bromoxynil	1.0	2300-66-5	Dimethylamine dicamba	1.0
	(3,5-Dibromo-4-hydroxybenzonitrile)		23-03-16-4	Diallate	1.0
1689-99-2	Bromoxynil octanoate	1.0		[Carbamothioic acid, bis-1-methyl-ethyl-S-(2,3,-dichloro-2-propenyl) ester]	
	(Octanoic acid, 2,6-dibromo-4-cyanophenyl ester)				
1717-00-6	1,1-Dichloro-1-fluoroethane (HCFC-141b)	1.0	2303-17-5	Triallate	1.0
			2312-35-8	Propargite	1.0

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1836-75-5	Nitrofen [Benzene,2,4-dichloro-1-(4-nitrophenoxy)-]	0.1	2439-01-2	Chinomethionat (6-Methyl-1,3-dithiolo[4,5-b]-quinoxalin-2-one)	1.0
1861-40-1	Benfluralin (N-Buktyl-N-ethyl-2,6-dinitro-4-(trifluoromethyl)benzenamine)	1.0	2439-10-3	Dodine (Dodecylguanidine monoacetate)	1.0
1897-45-6	Chlorothalonil [1,3-Benzenedicarbonitrile,2,4,5,6-tetrachloro-]	1.0	2524-03-0	Dimethyl chlorothiophosphate	1.0
1910-42-5	Paraquat dichloride	1.0	2602-46-2	C.I. Direct Blue 6	0.1
1912-24-9	Atrazine (6-Chloro-N-ethyl-N'-(1-methyl-ethyl)-1,3,5-triazine-2,4-diamine)	0.1	2655-15-4	2,3,5-Trimethylphenyl methyl carbamate	1.0
1918-00-9	Dicamba (3,6-Dichloro-2-methoxybenzoic acid)	1.0	2699-79-8	Sulfuryl fluoride (Vikane)	1.0
1918-02-1	Picloram	1.0	2702-72-9	2,4,-D sodium salt	0.1
1918-16-7	Propachlor (2-Chloro-N-(1-methylethyl)-N-phenylacetamide)	1.0	2832-40-8	C.I. Disperse Yellow 3	1.0
1928-43-4	2,4-D 2-ethylhexyl ester	0.1	2837-89-0	2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124)	1.0
1929-73-3	2,4-D butoxyethyl ester	0.1	29791-38-2	2,4-D Chlorocrotyl ester	0.1
1929-82-4	Nitrapyrin (2-Chloro-6-(trichloromethyl)-pyridine)	1.0	3118-97-6	C.I. Solvent Orange 7	1.0
1937-37-7	C.I. Direct Black 38	0.1	3383-96-8	Temephos	1.0
5234-68-4	Carboxin (5,6-Dihydro-2-methyl-N-phenyl-1,4-oxathiin-3-carboxamide)	1.0	3653-48-3	Methoxone sodium salt ((4-Chloro-2-methylphenoxy)acetate sodium salt)	0.1
5598-13-0	Chlorpyrifos methyl (O,O-Diimethyl-O-(3,5,6-trichloro-pyridyl)phosphorothioate)	1.0	3761-53-3	C.I. Food Red 5	0.1
5902-51-2	Terbacil (5-Chloro-3-(1,1-dimethylethyl)-6-methyl-2,4(1H,3H)-pyrimidinedione)	1.0	4080-31-3	1-(3-Chloroallyl)-,5,7-triaza-1-azoniaadamantane chloride	1.0
6459-94-5	C.I. Acid Red 114	0.1	4170-30-3	Crotonaldehyde	1.0
7287-19-6	Prometryn (N,N'-Bis(1-methylethyl)-6-methylthio-1,3,5-triazine-2,4-diamine)	1.0	4549-40-0	N-Nitrosomethylvinylamine	0.1
7429-90-5	Aluminum (fume or dust)	1.0	4680-78-8	C.I. Acid Green 3	1.0
7439-92-1	Lead	0.1	7696-12-0	Tetramethrin (2,2-Dimethyl-3-(2-methyl-1-propenyl)cyclopropanecarboxylic acid (1,3,4,5,6,7-hexahydro-1,3-dioxo-2H-isoindol-2-yl)methyl ester)	1.0
7439-96-5	Manganese	1.0	7697-37-2	Nitric acid	1.0
7439-97-6	Mercury	1.0	7723-14-0	Phosphorus (yellow or white)	1.0
7440-02-0	Nickel	0.1	7726-95-6	Bromine	1.0
7440-22-4	Silver	1.0	7758-01-2	Potassium bromate	0.1
7440-28-0	Thallium	1.0	7782-41-4	Fluorine	1.0
7440-36-0	Antimony	1.0	7782-49-2	Selenium	1.0
7440-38-2	Arsenic	0.1	7782-50-5	Chlorine	1.0
7440-39-3	Barium	1.0	7786-34-7	Mevinphos	1.0
7440-41-7	Beryllium	0.1	7803-51-2	Phosphine	1.0
7440-43-9	Cadmium	0.1	8001-35-2	Toxaphene	0.1
7440-47-3	Chromium	0.1	8001-58-9	Creosote	0.1
7440-48-4	Cobalt	1.0	9006-42-2	Metiram	1.0
			10028-15-6	Ozone	1.0
			10034-93-2	Hydrazine sulfate	0.1
			10049-04-4	Chlorine dioxide	1.0
			10061-02-6	trans-1,3-Dichloropropene	0.1
			10294-34-5	Boron trichloride	1.0
			10453-86-8	Resmethrin ([5-(Phenylmethyl)-3-furanyl]methyl-2,2-dimethyl-3-(2-methyl-1-propenyl)cyclopropanecarboxylate)]	1.0
			12122-67-7	Zineb	1.0
				[Carbamodithioic acid, 1,2-	

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7440-50-8	Copper	1.0		ethanediylbis-,zinc complex]	
7440-62-2	Vanadium (fume or dust)	1.0	12427-38-2	Maneb	1.0
7440-66-6	Zinc (fume or dust)	1.0		[Carbamodithioic acid, 1,2-ethanediylbis-,manganese complex]	
7550-45-0	Titanium tetrachloride	1.0	13194-48-4	Ethoprop	1.0
7632-00-0	Sodium nitrite	1.0		(Phosphorodithioic acid O-ethyl S,S-dipropyl ester)	
7637-07-2	Boron trifluoride	1.0	13356-08-6	Fenbutatin oxide	1.0
7647-01-0	Hydrochloric acid (aerosol form only)	1.0		(Hexakis(2-methyl-2-phenylpropyl)distannoxane)	
7664-38-2	Phosphoric acid	1.0	13463-40-6	Iron pentacarbonyl	1.0
7664-39-3	Hydrogen fluoride	1.0	13474-88-9	1,1-Dichloro-1,2,2,3,3-pentafluoropropane (HCFC-225cc)	1.0
7664-41-7	Ammonia	1.0	13684-56-5	Des medipham	1.0
	(includes anhydrous ammonia and aqueous ammonia from water dissociable ammonium salts and other sources; 10 percent of total aqueous ammonia is reportable under this listing)		14484-64-1	Ferbam	1.0
7664-93-9	Sulfuric acid	1.0		(Tris(dimethylcarbamodithioato-S,S')iron	
	(acid aerosols including mists, vapors, gas, fog, and other airborne species of any particle size)		15972-60-8	Alachlor	1.0
19044-88-3	Oryzalin	1.0	16071-86-6	C.I. Direct Brown 95	0.1
	(4-(Dipropylamino)-3,5-dinitrobenzenesulfonamide)		16543-55-8	N-Nitrosomnicotine	0.1
19666-30-9	Oxydiazon	1.0	17804-35-2	Benomyl	1.0
	(3-[2,4-Dichloro-5-(1-methylethoxy)phenyl]-5-(1,1-dimethylethyl)-1,3,4-oxadiazol-2(3H)-one)		28249-77-6	Thiobencarb	1.0
20325-40-0	3,3'-Dimethoxybenzidine dihydrochloride(o-Dianisidine dihydrochloride)	0.1		(Carbamic acid, diethylthio-,S-(p-chlorobenzyl)ester)	
20354-26-1	Methazole	1.0	28407-37-6	C.I. Direct Blue 218	0.1
	(2-(3,4-Dichlorophenyl)-4-methyl-1,2,4-oxadiazolidine-3,5-dione)		29232-93-7	Pirimiphos methyl	1.0
20816-12-0	Osmium tetroxide	1.0		(O-(2-(Diethylamino)-6-methyl-4-pyrimidinyl)-O,O-dimethyl phosphorothioate)	
20859-73-8	Aluminum phosphide	1.0	30560-19-1	Acephate	1.0
21087-64-9	Metribuzin	1.0		(Acetylphosphoramidothioic acid O,S-dimethyl ester)	
21725-46-2	Cyanazine	1.0	31218-83-4	Propetamphos	1.0
22781-23-3	Bendiocarb	1.0		(3-[(Ethylamino)methoxy phosphinothioyl]oxy]-2-butenic acid, 1-methylethyl ester)	
	[2,2-Dimethyl-1,3-benzodioxol-4-olmethylcarbamate]		33089-61-1	Amitraz	1.0
23564-05-8	Thiophanatemethyl	1.0	34014-18-1	Tebuthiuron	1.0
23564-06-9	Thiophanate ethyl	1.0		(N-[5-(1,1-Dimethylethyl)-1,3,4-thiadiazol-2-yl]-N,N'-dimethylurea)	
	([1,2-Phenylenebis-(iminocarabonothioyl)]biscarbamic acid diethyl ester)		34077-87-7	Dichlorotrifluoroethane	1.0
23950-58-5	Pronamide	1.0	35367-38-5	Diqlubenzuron	1.0
25311-71-1	Isofenphos	1.0	35400-43-2	Sulprofos	1.0
	(2-[[[Ethoxyl](1-methylethyl)-amino]phosphinothioyl]oxy]benzoic acid 1-methylethyl ester)			(O-Ethyl O-[4-(methylthio)phenyl]- phosphorodithioic acid S-propyl ester)	
25321-14-6	Dinitrotoluene (mixed isomers)	1.0	35554-44-0	Imazalil	1.0
25321-22-6	Dichlorobenzene (mixed isomers)	0.1		(1-[2-(2,4-Dichlorophenyl)2-(2-propenyloxy)ethyl]-1H-imidazole)	
25376-45-8	Diaminotoluene (mixed isomers)	0.1	35691-65-7	1-Bromo-1-(bromomethyl)-1,3-propanedicarbonitrile	1.0
26002-80-2	Phenothrin	1.0	38727-55-8	Diethatyl ethyl	1.0
			39156-41-7	2,4-Diaminoanisole sulfate	0.1
			39300-45-3	Dinocap	1.0
			39515-41-8	Fenpropathrin	1.0

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26471-62-5	(2,2-Dimethyl-3-(2-methyl-1-propenyl)cyclopropanecarboxylic acid (3-phenoxyphenyl)methyl ester)	0.1	40487-42-1	(2,2,3,3-Tetramethylcyclopropane carboxylic acid cyano(3-phenoxyphenyl)methyl ester)	1.0
26628-22-8	Toluene diisocyanate (mixed isomers)	1.0		Pendimethalin (N-(1-Ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine)	1.0
26644-46-2	Sodium azide	1.0	41198-08-7	Profenofos (O-(4-Bromo-2-chlorophenyl)-O-ethyl-S-propyl-phosphorothioate)	1.0
27314-13-2	Triforine (N,N'-[1,4-Piperazinediylbis(2,2,2-trichloroethylidene)]bisformamide)	1.0	41766-75-0	3,3'-Dimethylbenzidine dihydrofluoride (o-Tolidine dihydrofluoride)	0.1
28057-48-9	Norflurazon (4-Chloro-5-(methylamino)-2-[3-(trifluoromethyl)phenyl]-3(2H)-pyridazinone)	1.0	42874-03-3	Oxyfluorfen	1.0
	d-trans-Allethrin	1.0	43121-43-3	Triadimefon	1.0
50471-44-8	[d-trans-Chrysanthemic acid of d-allethrine]	1.0	66441-23-4	(1-(4-Chlorophenoxy)-3,3-dimethyl-1-(1H-1,2,4-triazol-1-yl)-2-butanone)	1.0
51235-04-2	Vinclozolin (3-(3,5-Dichlorophenyl)-5-ethenyl-5-methyl-2,4-oxazolidinedione)	1.0		Fenoxaprop ethyl (2-(4-((6-Chloro-2-benzoxazolylen)-oxy)phenoxy) propanoic acid, ethyl ester)	1.0
51338-27-3	Hexazinone	1.0	67485-29-4	Hydramethylnon (Tetrahydro-5,5-dimethyl-2(1H)-pyrimidinone[3-[4-(trifluoromethyl)phenyl]-1-[2-[4-(trifluoromethyl)phenyl]ethenyl]-2-propenylidene]hydrazone)	1.0
51630-58-1	Diclofop methyl (2-[4-(2,4-Dichlorophenoxy)-phenoxy]propanoic acid, methyl ester)	1.0	68085-85-8	Cyhalothrin (3-(2-Chloro-3,3,3-trifluoro-1-propenyl)-2,2-Dimethylcyclopropanecarboxylic acid cyano(3-phenoxyphenyl)methyl ester)	1.0
52645-53-1	Fenvalerate (4-Chloro-alpha-(1-methylethyl)-benzeneacetic acid cyano(3-phenoxyphenyl)methyl ester)	1.0	68359-37-5	Cyfluthrin (3-(2,2-Dichloroethenyl)-2,2-dimethylcyclopropanecarboxylic acid, cyano(4-fluoro-3-phenoxyphenyl)methyl ester)	1.0
53404-19-6	Permethrin (3-(2,2-Dichloroethenyl)-2,2-dimethylcyclopropane carboxylic acid,(3-phenoxyphenyl)methyl ester)	1.0	69409-94-5	Fluvalinate (N-[2-Chloro-4-(trifluoromethyl)-phenyl]-DL-valine(+)-cyano(3-phenoxyphenyl)methyl ester)	1.0
53404-37-8	Bromacil, lithium salt (2,4-(1H,3H)-Pyrimidinedione,5-bromo-6-methyl-3-(1-methyl-propyl), lithium salt)	0.1	69806-50-4	Fluazifop butyl (2-[4-[[5-(Trifluoromethyl)-2-pyridinyl]oxy]phenoxy]propanoic acid,butyl ester)	1.0
53404-60-7	Dazomet, sodium salt (Tetrahydro-3,5-dimethyl-2H-1,3,5-thiadiazine-2-thione,ion(1-), sodium)	1.0	71751-41-2	Abamectin [Avermectin B1]	1.0
55290-64-7	Dimethipin (2,3,-Dihydro-5,6-dimethyl-1,4-dithiin 1,1,4,4-tetraoxide)	1.0	72178-02-0	Fomesafen (5-(2-Chloro-4(trifluoromethyl)-phenoxy)-N-methylsulfonyl)-2-nitrobenzamide)	1.0
55406-53-6	3-Iodo-2-propynyl butylcarbamate	1.0	72490-01-8	Fenoxycarab (2-(4-Phenoxyphenoxy)-ethyl-carbamic acid ethyl ester)	1.0
57213-69-1	Triclopyr triethylammonium salt	1.0	74051-80-2	Sethoxydim (2-[1-(Ethoxyimino)butyl]-5-[2-(ethylthio)propyl]-3-hydroxyl-2-]	1.0
59669-26-0	Thiodicarab	1.0			
60168-88-9	Fenarimol (.alpha.-(2-Chlorophenyl)-.alpha.-4-chlorophenyl-5-pyrimidine-methanol)	1.0			
60207-90-1	Propiconazole (1-[2-(2,4-Dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl]methyl-	1.0			



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62476-59-9	1H-1,2,4,-triazole) Acifluorfen, sodium salt (5-(2-Chloro-4-(trifluoromethyl)- phenoxy)-2-nitrobenzoic acid, sodium salt]	1.0	76578-14-8	cyclohexen-1-one) Quizalofop-ethyl (2-[4-[(6-Chloro-2- quinoxalinyloxy]phenoxy] propanoic acid ethyl ester)	1.0
63938-10-3	Chlorotetrafluoroethane	1.0	77501-63-4	Lactofen (Benzoic acid, (5-2-Chloro-4-(tri- fluoromethyl)phenoxy)-2-nitro-2- ethoxy-1-methyl-2-oxoethyl ester)	1.0
64902-72-3	Chlorsulfuron (2-Chloro-N-[[[(4-methoxy-6- methyl-1,3,5-triazin-2-yl)amino] carbonyl]benzenesulfonamide)	1.0	82657-04-3	Bifenthrin	1.0
64969-34-2	3,3'-Dichlorobenzidine sulfate	0.1			
CAS Number	Chemical Name	DeMinimis Concentration			
88671-89-0	Myclobutanil (.alpha.-Butyl-.alpha.-(4- chlorophenyl)-1H-1,2,4-triazole-1- propanenitrile)	1.0			
90454-18-5	Dichloro-1,1,2-trifluoroethane	1.0			
90982-32-4	Chlorimuron ethyl (Ethyl-2-[[[(4-chloro-6- methoxyprimidin-2-yl)-carbonyl]- amino]sulfonyl]benzoate)	1.0			
101200-48-0	Tribenuron methyl (2-((((4-Methoxy-6-methyl-1,3,5- triazin-2-yl)-methylamino) carabonyl)amino)sulfonyl)-,methyl ester)	1.0			
111512-56-2	1,1-Dichloro-1,2,3,3,3- pentafluoropropane (HCFC-225eb)	1.0			
111984-09-9	3,3'-Dimethoxybenzidine hydrochloride (o-Dianisidine hydrochloride)	0.1			
127564-92-5	Dichloropentafluoropropane	1.0			
128903-21-9	2,2-Dichloro-1,1,1,3,3- pentafluoropropane(HCFC-225aa)	1.0			
136013-79-1	1,3-Dichloro-1,1,2,3,3- pentafluoropropane (HCFC-225ea)	1.0			

### c. Chemical Categories

Section 313 requires reporting on the toxic chemical categories listed below, in addition to the specific toxic chemicals listed above.

The metal compounds listed below, unless otherwise specified, are defined as including any unique chemical substance that contains the named metal (i.e., antimony, nickel, etc.) as part of that chemical's structure.

Toxic chemical categories are subject to the 1 percent *de minimis* concentration unless the substance involved meets the definition of an OSHA carcinogen in which case the 0.1 percent *de minimis* concentration applies. The *de minimis* concentration for each category is provided in parentheses.

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**Antimony Compounds (0.1)**

Includes any unique chemical substance that contains antimony as part of the infrastructure of that chemical.

**Arsenic Compounds (inorganic compounds: 0.1; organic compounds: 1.0)**

Includes any unique chemical substance that contains arsenic as part of the infrastructure of that chemical.

**Barium Compounds (0.1)**

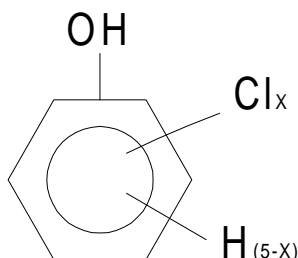
Includes any unique chemical substance that contains barium as part the infrastructure of that chemical.. This category does not include: Barium sulfate (CAS Number 7727-43-7)

**Beryllium Compounds (inorganic compounds: 0.1; organic compounds: 1.0)**

Includes any unique chemical substance that contains beryllium as part of the infrastructure of that chemical.

**Cadmium Compounds (inorganic compounds: 0.1; organic compounds: 1.0)**

Includes any unique chemical substance that contains cadmium as part of the infrastructure of that chemical.

**Chlorophenols**

Where  $x = 1$  to  $5$

**Chromium Compounds (chromium VI compounds: 0.1; chromium III compounds: 1.0)**

Includes any unique chemical substance that contains chromium as part the infrastructure of that chemical.

**Cobalt Compounds (1.0)**

Includes any unique chemical substance that contains cobalt as part the infrastructure of that chemical..

**Copper Compounds (1.0)**

Includes any unique chemical substance that contains copper as part of the infrastructure of that chemical. This category does not include copper phthalocyanine compounds that are substituted with only hydrogen, and/or chlorine, and/or bromine.

**Cyanide Compounds (1.0)**

$X^+CN^-$  where  $X = H^+$  or any other group where a formal dissociation may occur. For example KCN or  $Ca(CN)_2$

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### Diisocyanates (1.0)

This category includes only those chemicals listed below.

38661-72-2	1,3-Bis(methylisocyanate)-cyclohexane
10347-54-3	1,4-Bis(methylisocyanate)-cyclohexane
2556-36-71	1,4-Cyclohexane diisocyanate
134190-37-7	Diethyldiisocyanatobenzene
4128-73-84	4,4'-Diisocyanatodiphenyl ether
75790-87-32	2,4'-Diisocyanatodiphenyl sulfide
91-93-0	3,3'-Dimethoxybenzidine 4,4'-diisocyanate
91-97-4	3,3'-Dimethyl-4,4'-diphenylene diisocyanate
139-25-3	3,3'-Dimethyldiphenylmethane-4,4'-diisocyanate
822-06-0	Hexamethylene-1,6-diisocyanate
4098-71-9	Isophorone diisocyanate
75790-84-0	4-Methyldiphenylmethane-3,4-diisocyanate
5124-30-1	1,1-Methylene bis(4-isocyanatocyclohexane)
101-68-8	Methylene bis(phenylisocyanate) (MDI)
3173-72-6	1,5-Naphthalene diisocyanate
123-61-5	1,3-Phenylene diisocyanate
104-49-4	1,4-Phenylene diisocyanate
9016-87-9	Polymeric diphenylmethane diisocyanate
16938-22-0	2,2,4-Trimethylhexamethylene diisocyanate
15646-96-5	2,4,4-Trimethylhexamethylene diisocyanate

### Ethylenebisdithiocarbamic acid, salts and esters (1.0)

Includes any unique chemical substance that contains and EDBC or an EDBC salt as part of the infrastructure of that chemical.

### Certain Glycol Ethers (1.0)

$R-(OCH_2CH_2)_n-OR'$

Where n = 1, 2, or 3

R = alkyl C7 or less; or

R = phenyl or alkyl substituted phenyl;

OR' consisting of carboxylic acid ester, sulfate, phosphate, nitrate, or sulfonate.

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**Lead Compounds (inorganic compounds: 1.0; organic compounds 1.0)**

Includes any unique chemical substance that contains lead as part of the infrastructure of that chemical.

**Manganese Compounds (1.0)**

Includes any unique chemical substance that contains manganese as part of the infrastructure of that chemical.

**Mercury Compounds (1.0)**

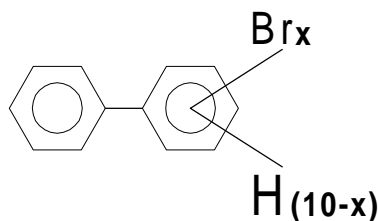
Includes any unique chemical substance that contains mercury as part of the infrastructure of that chemical.

**Nickel Compounds (0.1)**

Includes any unique chemical substance that contains nickel as part the infrastructure of that chemical.

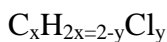
**Nicotine and salts (1.0)**

Includes any unique chemical substance that contains nicotine or a nicotine salt as part of infrastructure of that chemical.

**Nitrate compounds (water dissociable; reportable only when in aqueous solution) (1.0)****Polybrominated Bipheynls (PBBs) (0.1)**

Where  $x = 1$  to 10

**Polychlorinated alkanes (C10 to C13) (1.0, except for those members of the category that have an average chain length of 12 carbons and contain an average chlorine content of 60 percent by weight which are subject to the 0.1 percent *de minimis*)**



where  $x = 10$  to 13;

$y = 3$  to 12; and

the average chlorine content ranges from 40 - 70 percent with the limiting molecular formulas  $C_{10}H_{19}Cl_3$  and  $C_{13}H_{16}Cl_{12}$

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### **Polycyclic aromatic compounds (PACs) (0.1)**

This category includes only those chemicals listed below.

56-55-3	Benz(a)anthracene
205-99-2	Benzo(b)fluoranthene
205-82-3	Benzo(j)fluoranthene
207-08-9	Benzo(k)fluoranthene
189-55-9	Benzo(rst)pentaphene
218-01-9	Benzo(a)phenanthrene
50-32-8	Benzo(a)pyrene
226-36-8	Dibenz(a,h)acridine
224-42-0	Dibenz(a,j)acridine
53-70-3	Dibenzo(a,h)anthracene
194-59-2	7H-Dibenzo(c,g)carbazole
5385-75-1	Dibenzo(a,e)fluoranthene
192-65-4	Dibenzo(a,e)pyrene
189-64-0	Dibenzo(a,h)pyrene
191-30-0	Dibenzo(a,l)pyrene
57-97-6	7,12-Dimethylbenz(a) anthracene
193-39-5	Indeno[1,2,3-cd]pyrene
3697-24-3	5-Methylchrysene
5522-43-0	1-Nitropyrene

### **Selenium Compounds (1.0)**

Includes any unique chemical substances that contains selenium part the infrastructure of that chemical.

### **Silver Compounds (1.0)**

Includes any unique chemical substance that contains silver part of the infrastructure of that chemical.

### **Strychnine and salts (1.0)**

Includes any unique chemical substance that contains strychnine or a strychnine salt as part of the infrastructure of that chemical.

### **Thallium Compounds (1.0)**

Includes any unique chemical substance that contains thallium as part the infrastructure of that chemical.

### **Warfarin and salts (1.0)**

Includes any unique chemical substance that contains warfarin or a warfarin salt as part the infrastructure of that chemical.

### **Zinc Compounds (1.0)**

Includes any unique chemical substance that contains zinc as part of the infrastructure of that chemical.

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## Montreal Protocol Chemicals

<u>Group</u>	<u>Substance</u>	<u>Ozone Depleting Potential</u>
CFC13	(CFC-11)	1.0
CF2Cl2	(CFC-12)	1.0
C2F3Cl3	(CFC-113)	0.8
C2F4Cl2	(CFC-114)	1.0
C2F5Cl	(CFC-115)	0.6
CF2BrCl	(halon-1211)	3.0
CF3Br	(halon-1301)	10.0
C2F4Br2	(halon-2402)	6.039
CF3Cl	(CFC-13)	1.0
C2FC15	(CFC-111)	1.0
C2F2Cl4	(CFC-112)	1.0
C3FC17	(CFC-211)	1.0
C3F2Cl6	(CFC-212)	1.0
C3F3Cl5	(CFC-213)	1.0
C3F4Cl4	(CFC-214)	1.0
C3F5Cl3	(CFC-215)	1.0
C3F6Cl2	(CFC-216)	1.0
C3F7Cl	(CFC-217)	1.0
CCl4	carbon tetrachloride	1.1
C2H3Cl3 *	1,1,1-trichloroethane (methyl chloroform)	0.1
CHFC12	(HCFC-21)	
CHF2Cl	(HCFC-22)	
CH2FC1	(HCFC-31)	
C2HFC14	(HCFC-121)	
C2HF2Cl3	(HCFC-122)	
C2HF3Cl2	(HCFC-123)	
C2HF4Cl	(HCFC-124)	
C2H2FC13	(HCFC-131)	
C2H2F2Cl2	(HCFC-132)	
C2H2F3Cl	(HCFC-133)	
C2H3FC12	(HCFC-141)	
C2H3F2Cl	(HCFC-142)	
C2H4FC1	(HCFC-151)	
C3HFC16	(HCFC-221)	
C3HF2Cl5	(HCFC-222)	
C3HF3Cl4	(HCFC-223)	
C3HF4Cl3	(HCFC-224)	
C3HF5Cl2	(HCFC-225)	
C3HF6Cl	(HCFC-226)	
C3H2FC15	(HCFC-231)	
C3H2F2Cl4	(HCFC-232)	
C3H2F3Cl3	(HCFC-233)	

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C3H2F4Cl2	(HCFC-234)
C3H2F5Cl	(HCFC-235)
C3H3FCI4	(HCFC-241)
C3H3F2Cl3	(HCFC-242)
C3H3F3Cl2	(HCFC-243)
C3H3F4Cl	(HCFC-244)
C3H4FCI3	(HCFC-251)
C3H4F2Cl2	(HCFC-252)
C3H4F3Cl	(HCFC-253)
C3H5FCI2	(HCFC-261)
C3H5F2Cl	(HCFC-262)
C3H6FCI	(HCFC-271)

In addition, methyl bromide appears to have been added to this list. A UNEP report, "Synthesis of the Reports of the Scientific Assessment Panel and Technology and Economic Assessment Panel on the Impact of HCFC and Methyl Bromide Emissions," March 1995, contains the following: "Controls of the current Protocol freeze methyl bromide consumption by January 1995 at 1991 levels in non-Article 5(1) countries."

### Pollution Prevention Plans -- Chapter 173-307 WAC

**Last Update:** 10/1/91

#### WAC

173-307-010	Purpose.
173-307-015	Applicability.
173-307-020	Definitions.
173-307-030	Plan requirements.
173-307-040	Executive summary.
173-307-050	Due dates.
173-307-060	Plan availability.
173-307-070	Plan amendments and updates.
173-307-080	Progress reports.
173-307-090	Review process.
173-307-100	Penalties.
173-307-110	Appeals.
173-307-120	Exemptions.
173-307-130	Public disclosure.
173-307-140	Records.

**WAC 173-307-010 Purpose.** This chapter implements chapter 70.95C RCW, an act relating to hazardous waste reduction. The act encourages voluntary efforts to redesign industrial, commercial, production, and other processes to result in the reduction or elimination of hazardous waste by-products and to maximize the in-process reuse or reclamation of valuable spent material. The act establishes a legislative policy to encourage reduction in the use of hazardous substances and reduction in the generation of hazardous waste whenever economically and technically practicable. It also adopts as a policy goal for Washington state the reduction of hazardous waste generation, through hazardous substance use reduction and waste reduction techniques, by fifty percent by 1995. Some individual facilities may have the ability to reduce the use of hazardous materials and the generation of hazardous wastes by far greater than fifty percent while others may not be able to reduce by as much as fifty percent. Therefore, the fifty percent reduction goal is not applied as a regulatory requirement. The plans provided for in this chapter are intended to achieve, for each facility, the greatest reduction economically and technically practicable. The intent of the department of ecology is to provide technical assistance, to the greatest extent possible, to those required to prepare facility plans. The purpose of this chapter is to establish the specific elements required to be included in the documents required of hazardous waste generators and hazardous substance users under the act. The regulation also establishes completion dates and implements other requirements in the act. Copies of all rules, regulations, or statutes cited in this chapter are available from the Department of Ecology, Mailstop PV-11, Olympia, Washington 98504-8711.



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[Statutory Authority: Chapter 70.95C RCW. 91-20-131 (Order 91-35), § 173-307-010, filed 10/1/91, effective 11/1/91; 91-08-041 (Order 90-57), § 173-307-010, filed 4/1/91, effective 5/2/91.]

**WAC 173-307-015 Applicability.** (1) The requirements of WAC 173-307-010 through 173-307-140 apply to all hazardous substance users as defined in this chapter and to hazardous waste generators who generate more than two thousand six hundred forty pounds of hazardous waste per year, except for those facilities that are primarily treatment, storage, and disposal facilities or recycling facilities. Used oil to be rerefined or burned for energy or heat recovery shall not be used in the calculation of hazardous wastes generated for purposes of this regulation, and is not required to be addressed by plans prepared under this regulation. For purposes of this section, hazardous waste reported on the annual dangerous waste generator report as having been either recycled on-site or recycled for beneficial use off-site and/or amounts of hazardous substances introduced into a process and subsequently recycled for beneficial use, shall not be used in the calculation of hazardous waste generated. A facility may petition the director to exclude hazardous wastes recycled for beneficial use even if they were not reported as such on the annual dangerous waste generator report. Documentation from the hazardous waste handling facility that the hazardous waste was recycled for beneficial use must be submitted along with the petition.

(2) Except as noted in subsection (3) of this section, each hazardous substance user and hazardous waste generator identified above must prepare one plan for each facility owned or operated.

(3) A person with multiple interrelated facilities where a significant majority of the processes are substantially similar, as defined in this chapter, may prepare a single plan covering one or more of those facilities.

(a) A person desiring to submit a single plan under this provision must first submit to the director documentation that a significant majority of the processes at the facilities are substantially similar processes in order to obtain approval prior to plan development. This documentation must be submitted by May 1 of the year prior to the plan due date.

(b) If a single plan is being prepared for two or more interrelated facilities with substantially similar processes, the sum total of the hazardous waste generated and the hazardous substances used by these facilities must be considered when applying any of the thresholds and/or percentages required by this chapter.

(c) In instances where a person has interrelated facilities without substantially similar processes, a single document may be prepared, but it must contain separate detailed plans for each facility.

(4) Facilities required by this chapter to prepare plans are also required to pay a hazardous waste fee, as described in chapter 173-305 WAC. The requirements of WAC 173-305-010 through 173-305-050 and 173-305-210 through 173-305-240 specifically apply.

[Statutory Authority: Chapter 70.95C RCW. 91-20-131 (Order 91-35), § 173-307-015, filed 10/1/91, effective 11/1/91; 91-08-041 (Order 90-57), § 173-307-015, filed 4/1/91, effective 5/2/91.]

**WAC 173-307-020 Definitions.** As used in this chapter, the following terms have the meanings indicated unless the context clearly requires otherwise.

"Closed-loop recycling" means that the entire process through completion of any reclamation is closed by being entirely connected with pipes or other comparable enclosed means of conveyance. Recycled materials are returned to the original process or processes.

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"Dangerous waste" means any discarded, useless, unwanted, or abandoned nonradioactive substances, including but not limited to certain pesticides, or any residues or containers of such substances which are disposed of in such quantity or concentration as to pose a substantial present or potential hazard to human health, wildlife, or the environment because such wastes or constituents or combinations of such wastes:

Have short-lived, toxic properties that may cause death, injury, or illness or have mutagenic, teratogenic, or carcinogenic properties; or

Are corrosive, explosive, flammable, or may generate pressure through decomposition or other means.

Dangerous wastes shall specifically include those wastes designated as extremely hazardous by rules adopted pursuant to chapter 70.105 RCW.

"Department" means the Department of Ecology.

"Director" means the director of the Department of Ecology or the director's designee.

"EPA/state dangerous waste identification number" means the number assigned by the EPA (Environmental Protection Agency) or by the Department of Ecology to each generator and/or transporter and treatment, storage, and/or disposal facility.

"Extremely hazardous waste" means any dangerous waste which:

Will persist in a hazardous form for several years or more at a disposal site and which in its persistent form:

Presents a significant environmental hazard and may be concentrated by living organisms through a food chain or may affect the genetic make-up of man or wildlife; and

Is highly toxic to man and wildlife;

If disposed of at a disposal site in such quantities as would present an extreme hazard to man or the environment.

Extremely hazardous waste shall specifically include those wastes designated as extremely hazardous by rules adopted pursuant to chapter 70.105 RCW.

"Facility" means any geographical area that has been assigned an EPA/state dangerous waste identification number. In the case of a hazardous substance user not having an EPA/state dangerous waste identification number, facility means all buildings, equipment, structures, and other stationary items located on a single site or on contiguous or adjacent sites and owned or operated by the same person.

"Fee" means the annual hazardous waste fees imposed under RCW 70.95E.020 and 70.95E.030.

"Generate" means any act or process which produces hazardous waste or which first causes a hazardous waste to become subject to regulation.

"Hazardous substance" means any hazardous substance listed as a hazardous substance as of the effective date of this section pursuant to Section 313 of Title III of the Superfund Amendments and Reauthorization Act and any further updates, and all ozone depleting compounds as defined by the Montreal Protocol of October 1987 and any further updates of the Montreal Protocol.

"Hazardous substance use reduction" means the reduction, avoidance, or elimination of the use, toxicity, or production of hazardous substances without creating substantial new risks to human health or the environment. "Hazardous substance use reduction" includes proportionate changes in the usage of hazardous substances as the usage of a hazardous substance or hazardous substances changes as a result of production changes or other business changes.

"Hazardous substance user" means any facility required to report under Section 313 of Title III of the Superfund Amendments and Reauthorization Act, except for those facilities which only distribute or use fertilizers or pesticides intended for commercial agricultural applications.

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Note: This definition refers to those SARA Title III, Section 313 reporters who must prepare a plan, whereas the definition of hazardous substance refers to the substances that must be addressed in the plan.

"Hazardous waste" means and includes all dangerous and extremely hazardous wastes, but does not include radioactive wastes or a substance composed of both radioactive and hazardous components and does not include any hazardous waste generated as a result of a remedial action under state or federal law.

"Hazardous waste generator" or "generator" means any person generating hazardous waste(s) which are subject to regulation by the department.

"Hazardous waste reduction" means all in-facility practices that reduce, avoid, or eliminate the generation of hazardous wastes or the toxicity of hazardous wastes, prior to generation, without creating substantial new risks to human health or the environment.

"Interrelated facilities" means multiple facilities owned or operated by the same person.

"Office" means the office of waste reduction.

"Plan" means the plan provided for in RCW 70.95C.200.

"Person" means an individual, trust, firm, joint stock company, partnership, association, state, public or private or municipal corporation, commission, political subdivision of a state, interstate body, the federal government, including any agency or officer thereof, and any Indian tribe or authorized tribal organization.

"Process" means one or a number of steps which produces an end product or service, or a component which is to be incorporated into an end product or service.

"Product" means any hazardous substance or mixture containing hazardous substances which is used by a facility in a production or service process. Metals or metal alloys used by the facility are not considered "products" if they do not become incorporated into the hazardous waste streams and have no known pathway for the release of metals to the environment, either at the facility or subsequent to their use at the facility, such as from ultimate disposal by the consumer. Facilities will have to decide whether to group similar products (for example with different brand names) and list them as a single product. While some flexibility is left to the facility, products must be identified as a single product if they have similar chemical composition and may be used interchangeably by the facility.

Note: The term "product" as defined here and used throughout this chapter is not to be confused with the term "end product" which specifically refers to the "output" of a production process.

"Recycled for beneficial use" means the use of hazardous waste, either before or after reclamation, as a substitute for a commercial product or raw material, but does not include:

Use constituting disposal;

Incineration; or

Use as a fuel.

"Recycling" means reusing waste materials and extracting valuable materials from a waste stream. Recycling does not include burning for energy recovery.

Note: While burning for energy recovery may be preferable to disposal, burning for energy recovery does not count as recycling for the purpose of chapter 70.95C RCW.

"Remedial action wastes" means hazardous wastes which result from the cleanup of sites under state or federal hazardous waste laws.

"Shifting of risks" means changing the character, location, or receptor of a toxic material without achieving a substantial reduction in the overall risk to health and safety or the environment.

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"Substantially similar processes" means processes that are essentially interchangeable, inasmuch as they use similar equipment and materials and produce similar products or services and generate similar wastes.

"Treatment" means the physical, chemical, or biological processing of waste to render it completely innocuous, produce a recyclable by-product, reduce toxicity, or substantially reduce the volume of material requiring disposal as described in the priorities established in RCW 70.105.150. Treatment does not include incineration.

"Used oil" means: Lubricating fluids that have been removed from an engine crankcase, transmission, gearbox, hydraulic device, or differential of an automobile, bus, truck, vessel, plane, heavy equipment, or machinery powered by an internal combustion engine; any oil that has been refined from crude oil, used, and as a result of use, has been contaminated with physical or chemical impurities; and any oil that has been refined from crude oil and, as a consequence of extended storage, spillage, or contamination, is no longer useful to the original purchaser. "Used oil" does not include used oil to which hazardous wastes have been added.

[Statutory Authority: Chapter 70.95C RCW. 91-20-131 (Order 91-35), § 173-307-020, filed 10/1/91, effective 11/1/91; 91-08-041 (Order 90-57), § 173-307-020, filed 4/1/91, effective 5/2/91.]

**WAC 173-307-030 Plan requirements.** This section establishes the specific elements required to be included in a plan. The purpose of a plan is to require serious consideration of ways in which processes and procedures may be modified to reduce dependence upon hazardous substances and/or the generation of hazardous wastes. All plans must consider opportunities based on the following priorities: Hazardous substance use reduction and hazardous waste reduction, recycling, and treatment. The plans shall consist of the following parts:

(1) Part one. Part one shall include:

(a) A written policy articulating management and corporate support for the plan and a commitment to implement planned activities and achieve established goals.

(b) The plan scope and objectives.

(c) A description of the facility type, a description of product(s) made and/or services provided, and a statement or listing of the current level(s) of production or service activity in units of measure appropriate to the industry or activity;

(d) A general overview of the processes used in production or service activities (a schematic drawing may be included);

(e) A statement providing, for the last calendar year, the total pounds of extremely hazardous waste and total pounds of dangerous waste reported on Form 4, Generator Annual Dangerous Waste Report, and, if applicable, the total pounds of toxic releases reported on Form R under SARA Title III, Section 313; and

(f) A description of current reduction, recycling, and treatment activities and documentation of hazardous substance use reduction and hazardous waste reduction efforts completed prior to the first plan due date specified in WAC 173-307-050. Clearly separate the explanations of reduction activities from recycling and other management activities.

(2) Part two. Part two shall include an identification of hazardous substances used and hazardous wastes generated by the facility, a description of the facility processes, an identification of reduction, recycling, and treatment opportunities, an evaluation of those opportunities, a selection of proposed options, a policy to prevent shifting of risks, performance goals, and an implementation schedule. Specifically, Part two shall include:

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(a) An identification of products containing hazardous substances used and hazardous wastes generated. This is to be based on actual usage and generation during the most recent calendar year for which records are available. This task can be accomplished by choosing one of two approaches. The approaches are identified as the "pounds approach" and the "percentage approach." Look at the following descriptions and requirements of each of these and determine which one you wish to use.

(i) "Pounds approach."

This approach requires you to identify the types and amounts, in either weight or volume, of hazardous waste generated and products containing hazardous substances used up to these threshold levels:

(A) All dangerous waste streams five hundred pounds or greater, any smaller dangerous waste streams which individually represents ten percent or more of the total annual hazardous wastes, and all extremely hazardous waste streams subject to regulation by the department. If this combination equals less than ninety percent of the total hazardous wastes generated, then additional dangerous wastes generated at the facility shall be included until ninety percent of the total is reached; and

(B) Each product used which contains a total of fifty percent or more of any combination of hazardous substances if one thousand pounds or more was used; each product used which contains a total of between twenty-five percent and forty-nine percent of hazardous substances if four thousand pounds or more was used; and each product used which contains a total of between ten and twenty-four percent of hazardous substances if ten thousand pounds or more was used. Any product which contains less than ten percent of any hazardous substances need not be included in the list regardless of the amount of the product used.

(C) Office products and products which are used at the facility for nonprocess routine janitorial or grounds maintenance related activities may be excluded from this list.

(D) Hazardous substances used and hazardous wastes generated in laboratory research need not be listed. Note: See Part two, (k) of this subsection for discussion on this issue.

(ii) "Percentage approach."

This approach requires you to identify the types and amounts, in either weight or volume, of hazardous waste generated and products containing hazardous substances used up to these threshold levels;

(A) All extremely hazardous waste and enough additional dangerous waste to reach ninety percent of all the hazardous waste generated; and

(B) Ninety percent of all the products used which contain hazardous substances. This selection of products should attempt to include those that contain the highest concentrations of hazardous substances and the most toxic hazardous substances.

(C) Office products and products which are used at the facility for nonprocess routine janitorial or grounds maintenance related activities may be excluded from this list.

(D) Hazardous substances used and hazardous wastes generated in laboratory research need not be listed. Note: See Part two, (k) of this subsection for discussion on this issue.

(iii) Determinations of whether these quantities are met or exceeded for either approach shall be based on the best available information. This information may be included or referenced in the plan. Available information may include any or all of the following as necessary to determine quantities of hazardous substances contained in products; information available from material safety data sheets, information furnished upon request from manufacturers or suppliers of hazardous substances or products containing hazardous substances, information obtained from the department, and information otherwise known by the facility owner or operator.

An explanation of the procedures used to determine that the thresholds were met or exceeded must be included in this section of the plan.

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(iv) The above thresholds shall only be used for plans required to be completed prior to September 2, 1996. Plans or plan updates completed from that date on must identify the types and amounts, in either weight or volume, of hazardous waste generated and hazardous substances used up to the following threshold levels;

(A) The "pounds approach" can only be used for identifying hazardous waste after September 2, 1996. This approach cannot be used for products containing hazardous substances. The thresholds for hazardous waste are:

All dangerous waste streams five hundred pounds or greater, any smaller dangerous waste streams which individually represents ten percent or more of the total annual hazardous wastes, and all extremely hazardous waste streams subject to regulation by the department. If this combination equals less than ninety-five percent of the total hazardous wastes generated, then additional dangerous wastes generated at the facility shall be included until ninety-five percent of the total is reached.

(B) The "percentage approach" remains an optional approach for hazardous waste, but it is the only approach that can be used for products. The thresholds for this approach are:

All extremely hazardous waste and enough additional dangerous waste to reach ninety-five percent of all the hazardous waste generated; and

Ninety-five percent of all the products used which contain hazardous substances.

(C) The exemptions in subitems (C) and (D) of item (ii) of this subdivision remain in effect.

(b) A detailed description of each process in the facility that generates hazardous waste or uses products containing hazardous substances as identified in the chosen approach in (a) of this subsection. This description may include a schematic drawing.

(c) For the hazardous waste and products containing hazardous substances identified in (a) of this subsection within each of the processes identified in (b) of this subsection, an identification, based on thorough research, of all reasonable opportunities for further hazardous substance use reduction, hazardous waste reduction, recycling, and treatment. Thorough research shall include, at a minimum, a review of literature commonly available to that industry or trade. The full range of potentially feasible opportunities is to be identified without regard to possible impediments to implementing the opportunities. In identifying opportunities, consideration shall be given to alternative approaches which, in the judgment of the facility management, satisfy the same demand for end products or services but use substantially less hazardous substances or result in the generation of substantially less hazardous waste;

(d) An evaluation of the identified opportunities. Opportunities shall be grouped by priority and evaluated according to these priorities. The priorities are, in descending order: Hazardous substance use and hazardous waste reduction; recycling; and, treatment. Opportunities of a lower priority shall be given consideration only after a determination is made that the higher priority opportunities are inappropriate due to impediments to their implementation. Impediments that shall be considered acceptable include, but are not limited to: Adverse impacts on product quality, legal or contractual obligations, economic and technical practicality, safety considerations, and the creation of substantial new risks to human health or the environment.

Except with respect to the use and distribution of fertilizers or pesticides intended for commercial agricultural applications, the evaluation of hazardous waste reduction opportunities must include an evaluation of hazardous substance use reduction opportunities for those hazardous substances which subsequently result in hazardous waste streams as well as an evaluation of other opportunities for the reduction of hazardous waste.

The evaluation required under this subsection shall include an economic analysis, a technical evaluation, an identification of whether, and if so how, the identified opportunity would result in a shifting of risk(s) from one part of a process, environmental medium, or product to another and an identification of all impediments to implementing the opportunities. The economic

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analysis shall seek to identify the total costs associated with the current hazardous substance use and hazardous waste generation, management and disposal, compared with comparable costs associated with implementing the alternatives.

Evaluation of each opportunity may be considered complete when enough information is available to select or reject the opportunity for implementation. For opportunities rejected, the reason(s) for rejecting them shall be stated.

(e) A selection of opportunities to be implemented in accordance with the evaluation conducted in (d) of this subsection. For each selected opportunity, the process(es) it affects shall be identified, and estimates of the amount, by weight, of the reduction of hazardous substances or products containing hazardous substances and hazardous waste reduction which would be achieved through implementation shall be stated, as well as the amount of hazardous wastes recycled or treated as a result of implementation shall be included;

(f) A written policy stating that in implementing the selected options whenever technically and economically practicable, risks will not be shifted from one part of a process, environmental medium, or product to another;

(g) Specific performance goals in each of the following categories, expressed in numeric terms:

(i) Hazardous substances or products containing hazardous substances to be reduced or eliminated from use;

(ii) Hazardous wastes to be reduced or eliminated through hazardous waste reduction techniques;

(iii) Materials or hazardous wastes to be recycled; and

(iv) Hazardous wastes to be treated.

If the establishment of numeric performance goals is not practicable, the performance goals shall include a clearly stated list of objectives designed to lead to the establishment of numeric goals as soon as is practicable. Goals shall be set for a five-year period from the first reporting date (see (h) of this subsection regarding implementation activities that will take longer than five years);

(h) A five-year implementation schedule, which shall display planned implementation activities for each of the five calendar years following completion of the plan. Information to be provided shall include, but is not limited to, the opportunities (or phases of opportunities) being implemented and related milestones. Where complete implementation of a selected opportunity will take longer than five years, the schedule shall contain relevant milestones within a five-year period and an estimated date of completion. The schedule may be in table form and organized by opportunities within processes, if desired.

(i) A description of how those hazardous wastes that are not recycled or treated and the residues from recycling and treatment processes are managed may be included in the plan.

(j) Documentation of any research conducted in fulfillment of any of the above subdivisions of this subsection shall be available to the department upon request.

(k) For research laboratories, the plan may include, in lieu of all the detailed requirements of this subsection, a description of policies and procedures to be followed by laboratory personnel regarding the use of hazardous substances and the generation of hazardous wastes through laboratory research. These policies and procedures must be consistent with the waste reduction priorities as defined in this chapter.

(3) Part three. Part three shall provide a financial description of the plan, which shall identify costs and benefits realized from implementing selected opportunities to the extent reasonably possible. Part three shall also include a description of accounting systems which will be used to identify hazardous substance use and hazardous waste management costs. Liability, compliance, and oversight costs must be components of these accounting systems.

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(4) Part four. Part four of the plan shall include a description of personnel training and employee involvement programs. Each facility required to write a plan is encouraged to advise its employees of the planning process and solicit comments or suggestions from its employees on hazardous substance use and waste reduction opportunities.

[Statutory Authority: Chapter 70.95C RCW. 91-20-131 (Order 91-35), § 173-307-030, filed 10/1/91, effective 11/1/91; 91-08-041 (Order 90-57), § 173-307-030, filed 4/1/91, effective 5/2/91.]

**WAC 173-307-040 Executive summary.** Upon completion of a plan, the owner, chief executive officer, or other person with the authority to commit management to the plan, such as a facility manager, shall sign and submit an executive summary of the plan to the department. This summary shall be available from the department for public inspection upon request. The facility may elect to submit the complete plan to the department rather than prepare an executive summary. In that event, the complete plan shall also be available for public inspection.

Executive summaries shall include the following information from the plan:

(1) A written policy articulating management and corporate support for the plan and a commitment to implement planned activities and achieve established goals.

(2) The plan scope and objectives.

(3) A description of the facility type and a summary of product(s) made and/or services provided.

(4) A list of the type and amount of each hazardous waste and products containing hazardous substances as identified in WAC 173-307-030 (2)(a).

(5) A brief description of each process in the facility that generates hazardous waste or uses products containing hazardous substances as listed in subdivision (d).

(6) A description of current reduction, recycling, and treatment activities, and documentation of hazardous substance use reduction and hazardous waste reduction activities completed before the first reporting date specified in WAC 173-307-050.

(7) A summary of all further hazardous substance use reduction, hazardous waste reduction, recycling, and treatment opportunities identified. Opportunities shall be identified first for hazardous substance use reduction and hazardous waste reduction, secondly for recycling, and lastly for treatment. A statement of the reason(s) for rejecting any opportunity from further consideration and a summary of all identified impediments to implementing opportunities shall be included.

(8) A description of the opportunities selected to be implemented, process(es) affected, and estimated reductions to be achieved.

(9) Specific performance goals, expressed in numeric terms for each of the categories listed below (assumptions on changing production or service activity levels during the period covered by the plan must be described):

(a) Hazardous substances to be reduced or eliminated from use;

(b) Hazardous wastes to be reduced or eliminated through waste reduction techniques;

(c) Materials or hazardous wastes to be recycled; and

(d) Hazardous wastes to be treated.

If the establishment of numeric performance goals is not practicable, the performance goals shall include a clearly stated list of objectives designed to lead to the establishment of numeric goals as soon as is practicable. Goals shall be set for a five-year period from the first reporting date.

(10) The five-year implementation schedule identified in WAC 173-307-030 (2)(h) which shall display planned implementation activities for each of the five calendar years following completion of the plan.

(11) A summary of costs and benefits realized from implementing selected opportunities.



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(12) For research labs, the executive summary may include, in lieu of all the detailed requirements of this section, a description of policies and procedures to be followed by laboratory personnel regarding the use of hazardous substances and the generation of hazardous waste through laboratory research. These policies and procedures must be consistent with the waste reduction priorities as defined in this chapter.

[Statutory Authority: Chapter 70.95C RCW. 91-20-131 (Order 91-35), § 173-307-040, filed 10/1/91, effective 11/1/91; 91-08-041 (Order 90-57), § 173-307-040, filed 4/1/91, effective 5/2/91.]

**WAC 173-307-050 Due dates.** Plans shall be completed and executive summaries submitted in accordance with the following schedule:

(1) Hazardous waste generators who generated more than fifty thousand pounds of hazardous waste in calendar year 1991 and hazardous substance users who were required to report in 1991, by September 1, 1992;

(2) Hazardous waste generators who generated between seven thousand and fifty thousand pounds of hazardous waste in calendar year 1992 and hazardous substance users who were required to report for the first time in 1992, by September 1, 1993;

(3) Hazardous waste generators who generated between two thousand six hundred forty and seven thousand pounds of hazardous waste in 1993 and hazardous substance users who were required to report for the first time in 1993, by September 1, 1994;

(4) Hazardous waste generators who have not been required to complete a plan on or prior to September 1, 1994, must complete a plan by September 1 of the year following the first year that they generate more than two thousand six hundred forty pounds of hazardous waste; and

(5) Hazardous substance users who have not been required to complete a plan on or prior to September 1, 1994, must complete a plan by September 1 of the year following the first year that they are required to report under Section 313 of Title III of the Superfund Amendments and Reauthorization Act.

[Statutory Authority: Chapter 70.95C RCW. 91-08-041 (Order 90-57), § 173-307-050, filed 4/1/91, effective 5/2/91.]

**WAC 173-307-060 Plan availability.** Plans developed under chapter 173-307 WAC shall be kept at the facility and made available for review to authorized representatives of the department. The plan is not a public record under the public disclosure laws of the state of Washington contained in chapter 42.17 RCW, unless submitted in lieu of an executive summary as provided for in WAC 173-307-040.

[Statutory Authority: Chapter 70.95C RCW. 91-20-131 (Order 91-35), § 173-307-060, filed 10/1/91, effective 11/1/91; 91-08-041 (Order 90-57), § 173-307-060, filed 4/1/91, effective 5/2/91.]

**WAC 173-307-070 Plan amendments and updates.** (1) A plan must be kept reasonably current and may be amended in response to changes in facility operations, substances used, or wastes generated.

(a) Users or generators shall notify the department of an amended plan and submit amendments to their plan or executive summary, whichever was originally submitted, including an identification of which sections are being amended. The implementation schedule of the amended

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plan and/or new executive summary shall be within the original five-year timeline initiated by completion of the original plan.

(b) Even if a plan is amended, a five-year plan update will still be required five years from completion of the first plan, or from the last five-year update.

(2) Every five years, each plan shall be updated, and the plan or a new executive summary shall be submitted to the department. A plan update shall conform to the requirements for preparing reduction plans as specified in this chapter.

[Statutory Authority: Chapter 70.95C RCW. 91-20-131 (Order 91-35), § 173-307-070, filed 10/1/91, effective 11/1/91; 91-08-041 (Order 90-57), § 173-307-070, filed 4/1/91, effective 5/2/91.]

**WAC 173-307-080 Progress reports.** Progress reports shall be submitted to the department annually on September 1 following the due date of the plan. The purpose of the progress report is to provide information on quantities of hazardous waste and hazardous substances or products containing hazardous substances reduced in the prior twelve-month period.

(1) Progress reports shall include a discussion of:

(a) Performance goals. If numeric performance goals were listed in the plan, progress toward these goals shall be discussed. If numeric performance goals were not listed in the plan, progress made toward establishing numeric goals shall be discussed, and also progress made towards achieving the goals as stated in the plan. This discussion shall include:

(i) A description of reduction, recycling, and treatment opportunities which were implemented.

(ii) A description of the process(es) impacted by each opportunity.

(iii) A description of the quantities, by weight, of hazardous substances or products containing hazardous substances reduced and hazardous waste reduced by each option. Estimation techniques, and any assumptions used shall be described. Quantities reduced must be displayed in relation to changing production levels. The description shall also include a statement of the level of production or service activity in relation to the level of production or service activity stated in the plan at the time the plan was prepared.

**Note:** Factors not resulting in actual reductions, such as new estimating techniques, delistings of substances or hazardous wastes, and reclassifications of waste management techniques cannot be counted or claimed as reductions.

(iv) If measurement or estimation techniques are changed from the prior reports such that reductions are not additive for the five-year planning period, a methodology for converting prior reported reductions must be described and recalculations provided.

(b) Problems encountered in the implementation process. Problems shall be clearly identified and include a discussion of steps taken or proposed to resolve problems. An update on problems reported in previous progress reports shall be included.

(2) Upon the request of two or more users or generators belonging to similar industrial classifications, the department may aggregate data contained in their annual progress reports for the purpose of developing a public record.

[Statutory Authority: Chapter 70.95C RCW. 91-20-131 (Order 91-35), § 173-307-080, filed 10/1/91, effective 11/1/91; 91-08-041 (Order 90-57), § 173-307-080, filed 4/1/91, effective 5/2/91.]

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**WAC 173-307-090 Review process.** A user or generator required to prepare a plan shall permit the director or a representative of the director to review the plan to determine its adequacy.

(1) The department may review a plan, executive summary, or an annual progress report to determine whether the plan, executive summary, or annual progress report is adequate and shall base its determination solely on whether the plan, executive summary, or annual progress report is complete and prepared in accordance with the provisions of this chapter and the requirements of chapter 70.95C RCW.

(2) If a hazardous substance user or hazardous waste generator fails to complete an adequate plan, executive summary, or annual progress report, the department shall notify the user or generator of the inadequacy, identifying specific deficiencies. For the purposes of this section, a deficiency may include failure to develop a plan, failure to submit an executive summary, or failure to submit an annual progress report. The department shall specify a reasonable time frame, of not less than ninety days, within which the user or generator shall complete a modified plan, executive summary, or annual progress report addressing the specified deficiencies.

(3) If the department determines that a modified plan, executive summary, or annual progress report is inadequate, the department may, within its discretion, either require further modification or enter an order pursuant to WAC 173-307-100.

[Statutory Authority: Chapter 70.95C RCW. 91-08-041 (Order 90-57), § 173-307-090, filed 4/1/91, effective 5/2/91.]

**WAC 173-307-100 Penalties.** (1) If, after having received a list of specified deficiencies from the department, a hazardous substance user or hazardous waste generator required to prepare a plan fails to complete modification of a plan, executive summary, or annual progress report within the time period specified by the department, the department may enter an order pursuant to chapter 34.05 RCW finding the user or generator not in compliance with the requirements of RCW 70.95C.200. When the order is final, the department shall notify the department of revenue to charge a penalty fee. The penalty fee shall be the greater of one thousand dollars or three times the amount of the user's or generator's previous year's fee, in addition to the current year's fee. If no fee was assessed the previous year, the penalty shall be the greater of one thousand dollars or three times the amount of the current year's fee. The penalty assessed under this subsection shall be collected each year after the year for which the penalty was assessed until an adequate plan, executive summary, or annual progress report is completed.

(2) If a hazardous substance user or hazardous waste generator required to prepare a plan fails to complete an adequate plan, executive summary, or annual progress report after the department has levied against the user or generator the penalty provided in subsection (1) of this section, the user or generator shall be required to pay a surcharge to the department whenever the user or generator disposes of a hazardous waste at any hazardous waste incinerator or hazardous waste landfill facility located in Washington state, until a plan, executive summary, or annual progress report is completed and determined to be adequate by the department. The surcharge shall be equal to three times the fee charged for disposal. The department shall furnish the incinerator and landfill facilities in Washington state with a list of Environmental Protection Agency/state identification numbers of the hazardous waste generators that are not in compliance with the requirements of RCW 70.95C.200.

[Statutory Authority: Chapter 70.95C RCW. 91-08-041 (Order 90-57), § 173-307-100, filed 4/1/91, effective 5/2/91.]

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**WAC 173-307-110 Appeals.** A user or generator may appeal from a department order or a surcharge under RCW 70.95C.220 to the pollution control hearings board pursuant to chapter 43.21B RCW.

[Statutory Authority: Chapter 70.95C RCW. 91-08-041 (Order 90-57), § 173-307-110, filed 4/1/91, effective 5/2/91.]

**WAC 173-307-120 Exemptions.** A person required to prepare a plan because of the quantity of hazardous waste generated may petition the director to be excused from this requirement. The person must demonstrate to the satisfaction of the director that the quantity of hazardous waste generated was due to unique circumstances not likely to be repeated and that the person is unlikely to generate sufficient hazardous waste to require a plan in the next five years.

[Statutory Authority: Chapter 70.95C RCW. 91-08-041 (Order 90-57), § 173-307-120, filed 4/1/91, effective 5/2/91.]

**WAC 173-307-130 Public disclosure.** (1) The department shall make available for public inspection any executive summary or annual progress report submitted to the department. Any hazardous substance user or hazardous waste generator required to prepare an executive summary or annual progress report who believes that disclosure of any information contained in the executive summary or annual progress report may adversely affect the competitive position of the user or generator may request the department pursuant to RCW 43.21A.160 to delete from the public record those portions of the executive summary or annual progress report that may affect the user's or generator's competitive position. The department shall not disclose any information contained in an executive summary or annual progress report pending a determination of whether the department will delete any information contained in the report from the public record. This determination will be made within sixty days following a request for public inspection.

(2) Any ten persons residing within ten miles of a hazardous substance user or hazardous waste generator required to prepare a plan may file with the department a petition requesting the department to examine a plan to determine its adequacy. The department shall report its determination of adequacy to the petitioners and to the user or generator within a reasonable time. The department may deny a petition if the department has within the previous year determined the plan of the user or generator named in the petition to be adequate.

[Statutory Authority: Chapter 70.95C RCW. 91-08-041 (Order 90-57), § 173-307-130, filed 4/1/91, effective 5/2/91.]

**WAC 173-307-140 Records.** The department shall maintain a record of each plan, executive summary, or annual progress report it reviews, and a list of all plans, executive summaries, or annual progress reports the department has determined to be inadequate, including descriptions of corrective actions taken. This information shall be made available to the public.

[Statutory Authority: Chapter 70.95C RCW. 91-08-041 (Order 90-57), § 173-307-140, filed 4/1/91, effective 5/2/91.]

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### Pollution Prevention Planning Technical Assistance

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#### Regional Office Map

